The Builder

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ARCHITECTS' BENEVOLENT SOCIETY.

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The List of Subscribers and Annual Report may be obtained of the Hon. Secretary. Subscriptions will be received by WILLIAM TITE, Esq. St. Helen's-place, the Treasurer; or by Mr. GOULD, the Collector, 52, Great Ormond-street, W.C.

J. TURNER, Hon. Secretary, 15, Wilton-street.

BUILDERS' BENEVOLENT INSTITUTION.—An ELECTION of THREE PENSIONERS,—two Males and one Female,—will take place in NOVEMBER next. Candidates may obtain forms of application (to be returned on or before the 26th of AUGUST) at the Office, 19, Southampton-street, Bloomsbury. Pensions, 24*l.* per annum for males, and 20*l.* for females.

July 31, 1861. A. G. HARRIS, Secretary.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The ANNUAL CONGRESS will be held at EXETER, commencing MONDAY, AUGUST 19th, and continued to the 26th, inclusive.

Sir STAFFORD H. NORTHCOTE, Bart. M.P. C.B. M.A. President.

Excursions will be made to Crediton, Ford Abbey, Ottery St. Mary, Haccombe, Compton Castle, Torquay, Kent's Cavern, Tiverton, Bradfield House, Dartmouth, Darlington Hall, Berrey Pommeroy, Totnes, Dartmoor, &c. The various churches, castles, &c. together with the Cathedral of Exeter and other antiquities, will be examined and explained. Tickets to be had of the Local Secretaries, Exeter; and in London, of the Treasurer, T. J. PETTIGREW, Esq. Onslow-crescent, Brompton; and of the Curator, G. R. WRIGHT, Esq. 60, Pall-mall.

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PRIZES to ARTIST WORKMEN are now offered for—

STONE CARVING	£10	10	0	and	£5	5	0
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PORTIONS of any ACTUAL WORK in progress, Prizes according to merit. EXTRA PRIZES and Ten valuable Illustrated Books will also be added; and all deserving specimens will be sent to the International Exhibition of 1862.—For full particulars, apply, by letter, to the Hon. Secretary, at 13, Stratford-place, W.

A. J. B. BERESFORD HOPE, President.
GEO. GILBERT SCOTT, Treasurer.
JOSEPH CLARKE, Hon. Secretary.

THE PUGIN MEMORIAL (Pugin Travelling Fund).—The donations now amount to about 1,100*l.* At least 1,500*l.* will be required. Contributions are earnestly solicited, and will be received by

JOSEPH CLARKE, 13, Stratford-place, W.
TALBOT BURY, 50, Welbeck-street, W. } Hon. Secretaries.

CONTRACTS.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for ALTERATIONS and ADDITIONS to the ROTUNDA, in the Royal Military Repository, Woolwich.

Parties desiring to Tender for the execution of these Works must leave their names at this Office on or before the 7th day of AUGUST, 1861, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, Woolwich, 18th July, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS, &c.—TENDERS are required for LAYING all necessary PIPES, &c. at Fulwood Barracks, Preston, in connection with projected water supply to that establishment.

Parties desiring to Tender for the execution of these Works, must leave their names at this Office, on or before the 12th proximo, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party, as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, 225, Stretford-road, Manchester, July 24, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS, &c.—TENDERS are required for sundry ALTERATIONS and REPAIRS to the TOWERS L. and M. Shotley, N. Walton Ferry, P. near Landguard Fort, and Q. at Walton-on-the-Cliff, Suffolk.

Parties desiring to Tender for these Works must attend, personally or by agent, at this Office, between the 25th JULY and the 6th AUGUST, where plans and specification of the work may be seen, and all information obtained.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer's Office, Colchester, Essex, 19th July, 1861.

WAR DEPARTMENT CONTRACT.—Notice to BUILDERS.—TENDERS are required for ERECTING OFFICERS' QUARTERS, MEN'S BARRACKS, STORES, LATRINES, and MAGAZINE, also Staff, Guard, Wash, Cook, and Bath Houses, and forming Parades, Drainage, &c. in part execution of the New Barracks at Milton-next-Gravesend.

Parties desirous of Tendering for these Works are required to attend at this Office, on TUESDAY next, the 6th AUGUST, at TWELVE o'clock at Noon, to appoint a Surveyor to take out the quantities in conjunction with the Government Surveyor.

Each party will be required to pay the sum of 1*l.* 11s. 6d. for the quantities.

The Secretary of State for War does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, Gravesend, 30th July, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for the EXECUTION of the CARPENTER'S WORK and INTERNAL FITMENTS, in completion of the Casemated Barracks, south-west front, Vern Fort, Portland, viz.:—

Twenty-five Soldiers' Rooms and Passage;
Two Ablution Rooms, including Two Bath Rooms attached to each;
One Cook House, with Two Ovens;
One Cleaning Room;
One Orderly Room; and
Two Store Rooms.

Parties desiring to Tender for these Works, are required to attend at this Office on MONDAY, the 12th day of AUGUST, 1861, at ELEVEN o'clock, to appoint a Surveyor to take out the quantities in conjunction with the Government Surveyor. Each party will be required to pay the sum of one guinea for the quantities.

C. H. NUGENT, Capt. and Major Comdg. Royal Eng.

Royal Engineer Office, Vern, Portland, July 30, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for COMPLETING the EXCAVATION and EARTHWORK required to form a New BARRACK at the South Front Western Heights, Dover.

Parties desiring to Tender for the erection of these works must leave their names at this Office on or before the 8th day of AUGUST. 1861, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, Dover, 31st July, 1861.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for the COMPLETION of the GAS ARRANGEMENTS at the Cavalry Barracks, Hyde-park, Middlesex.

Parties desirous to Tender for this Work must leave their names at this Office on or before the 12th day of AUGUST, 1861, and pay the sum of half a guinea for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, London District, 11, James-street, Buckingham-gate, S.W. July 31st, 1861.

CONTRACTS.

WAR DEPARTMENT CONTRACT.—NOTICE to BUILDERS.—TENDERS are required for ERECTING a BATTERY, &c. on Salisbury Dock Pier, Liverpool.

Parties desiring to Tender for the erection of these Works must leave their names at this Office on or before the 8th proximo, and pay the sum of 10s. 6d. for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer's Office, 225, Stretford-road, Manchester, 24th July, 1861.

COAST GUARD CONTRACT.—NOTICE to BUILDERS and CONTRACTORS.—Persons desirous of TENDERING for the ERECTION of a COAST GUARD STATION at South Yarmouth, in the Isle of Wight, may inspect the Drawings and Specifications at the WATCH-HOUSE, South Yarmouth, or at this Office, between the hours of TEN and FOUR, from MONDAY, the 12th, to THURSDAY, the 22nd day of AUGUST now next ensuing, and both inclusive (Sunday excepted).

Tenders to be sent to this Office, not later than TWELVE o'clock at Noon of the 23rd of AUGUST, under seal, and directed to the Commodore Controller-General of Coast Guard, and endorsed "Tender for Yarmouth Station."

The Lords Commissioners of the Admiralty do not pledge themselves to accept the lowest or either of the Tenders.

Dated this 31st day of July, 1861, at the Admiralty Coast Guard Office, 12, Spring-gardens, London, S.W.

COAST GUARD CONTRACT.—NOTICE to BUILDERS and CONTRACTORS.—Persons desirous of TENDERING for the ERECTION of a COAST GUARD STATION, at Shoeburyness, in the County of Essex, may inspect the drawings and specifications at the Coast Guard Watch-room, Shoeburyness, or at this Office, between the hours of Ten and Four, from WEDNESDAY, the 24th inst. to WEDNESDAY, the 7th of AUGUST, now next ensuing and both inclusive (Sundays excepted).

Tenders to be sent to this Office not later than TWELVE o'clock at Noon of THURSDAY, the 8th of AUGUST, under seal, and directed to the Commodore Controller General of Coast Guard, and endorsed, "Tender for Shoeburyness Station."

The Lords Commissioners of the Admiralty do not pledge themselves to accept the lowest or either of the Tenders.

Dated this 16th day of July, 1861, at the Admiralty Coast Guard Office, 12, Spring-gardens, London, S.W.

NOTICE to BUILDERS.—TENDERS are required for ERECTING a new HOSPITAL, at Hounslow, in the County of Middlesex.

Parties desiring to Tender for the erection of this Work must leave their names at this Office on or before the 3rd AUGUST, 1861, and pay a sum of half a guinea for the bills of quantities, which will be forwarded to each party as soon as prepared by the Government Surveyor.

The Secretary of State does not bind himself to accept the lowest or any Tender.

Royal Engineer Office, London District, 11, James-street, Buckingham-gate, S.W. 22nd July, 1861.

TO BUILDERS.—TENDERS for THREE CHAPELS.—LIVERPOOL CEMETERY, ANFIELD PARK, WALTON.—The BURIAL BOARD for the PARISH of LIVERPOOL are prepared to receive TENDERS for the ERECTION of THREE CHAPELS in the above Cemetery. The Plans and Specifications can be seen at the Offices of the Board, 12, Clayton-square. Sealed Tenders are to be sent in, addressed to the Chairman of the Board, endorsed, "Tender for Chapels," on or before the 8th day of August next. The Board do not bind themselves to accept the lowest or any of the Tenders.—By order,

GEORGE TURVEY, Clerk to the Board,
12, Clayton-square, Liverpool, July 23, 1861.

TO BUILDERS.—The COMMITTEE for RESTORING, ENLARGING, and REFITTING St. Mary's Church, Hull, are desirous of receiving TENDERS for the various Works to be done in accordance with the Drawings and Specifications prepared by Mr. GEORGE GILBERT SCOTT, Architect. The Works are to be tendered for in three separate parts; namely—1st, Excavator, Mason, Bricklayer and Plasterer; 2nd, Carpenter, Joiner, and Ironmonger; 3rd, Smith, Plumber, Glazier, and Painter. The Drawings, Specifications, and Conditions may be seen at the Church, between the hours of NINE and FIVE, from FRIDAY, the 26th instant, to THURSDAY, the 8th AUGUST. Tenders to be delivered on or before FRIDAY, AUGUST the 9th, addressed to the Rev. JOHN SCOTT, Hull. Sureties will be required for the due performance of the works. The Committee do not pledge themselves to accept the lowest or any Tender.

TO BUILDERS.—HENTLAND, near ROSS.—Plans and Specifications for proposed SCHOOL-BUILDINGS may be seen at the Rectory, and TENDERS sent to the Rev. W. POOLE, at the same, on or before the 17th of AUGUST. The lowest or any Tender not necessarily accepted.

PRICHARD & SEDDON, Llandaff; and 6, Whitehall, London.

TO PAVIORS and OTHERS. — CONTRACT.—The Commissioners for Improving the TOWN of GODALMING, SURREY, are willing to receive TENDERS for RE-PITCHING PART of CHURCH STREET, viz.—to take up and remove the present pitching on the carriage road from the mark on Mr. Gould's house, 174 feet towards the church, measuring from the kerbing, and re-pitch the same distance with new granite stone, 3 inches wide by 6 inches deep. The work to be completed by the 1st of OCTOBER next. The Commissioners reserve to themselves the right of calling in an experienced surveyor to inspect the work when done. —Tenders for the above work to be sent on or before THURSDAY, the 8th day of AUGUST, to me, at my residence, High street, Godalming. The Commissioners do not pledge themselves to accept the lowest or any Tender.

JOHN DEBENHAM, Clerk to the Commissioners.

Godalming July 25, 1861.

[For remainder of Contracts see next page.

CONTRACTS.

METROPOLITAN IMPROVEMENTS.—SOUTHWARK and WESTMINSTER COMMUNICATION.—To BUILDERS, CONTRACTORS, and OTHERS.—The Metropolitan Board of Works hereby give notice that they will meet at the Office of the Board, Spring-gardens, S.W. on FRIDAY, the 9th day of AUGUST next, at TWELVE o'clock at noon, precisely, and will then be prepared to open TENDERS by parties who may be willing to CONTRACT for the CONSTRUCTION of a BRICK SEWER, Subway, and Vaults, with other works in connection therewith, along that portion of the line of the New Street, between High-street and Red Cross-street; also for the Formation of the Foot and Carriage Way, and Paving the same. Plans, sections, and a specification of the works, together with the form of Tender, may be inspected, and other particulars obtained at the Office of the Board, Spring-gardens, on and after THURSDAY, the 25th inst. between the hours of NINE a.m. and FOUR p.m. until THURSDAY, the 8th day of AUGUST next. Tenders, addressed to the Metropolitan Board of Works, must be delivered at their Office before FOUR o'clock on the last-mentioned day, and no Tender will be received after that hour. The Board do not bind themselves to accept the lowest or any Tender, and the party whose Tender shall be accepted will be required to provide two approved sureties for the due performance of the Works.

JOHN POLLARD, Clerk of the Board.

Spring-gardens, 20th July, 1861.

METROPOLITAN BOARD of WORKS.—VICTORIA-PARK APPROACH.—To BUILDERS, CONTRACTORS, and OTHERS.—The Metropolitan Board of Works hereby give notice that they will meet at the Office of the Board, Spring Gardens, S.W. on FRIDAY, the 9th day of AUGUST next, at TWELVE o'clock at Noon precisely, and will then be prepared to open TENDERS by parties who may be willing to CONTRACT for the CONSTRUCTION of a BRICK SEWER, 1,303 feet in length, or thereabouts, and the Formation of the Roadway for a length of 1,200 feet, or thereabouts, with other Works in connection therewith, in the line of the Victoria-Park Approach, between Bow Common-lane and the Mile-end-road, in the Hamlet of Mile-end Old Town, in the county of Middlesex. Plans, sections, and a specification of the works, together with the form of Tender, may be inspected, and other particulars may be obtained, at the Offices of the Board, Spring Gardens, between the hours of NINE a.m. and FOUR p.m. until THURSDAY, the 8th day of AUGUST next. Tenders, addressed to the "Metropolitan Board of Works," must be delivered at their Office, before FOUR o'clock on the last-mentioned day, and no Tender will be received after that hour. The Board do not bind themselves to accept the lowest or any Tender, and the party whose Tender shall be accepted will be required to provide two approved sureties for the due performance of the works.

JOHN POLLARD, Clerk of the Board.

Spring Gardens, 26th July, 1861.

PERSONS desirous of TENDERING for the ERECTION of a SCHOOL-HOUSE, MASTER'S RESIDENCE, and Out-offices, at Tenterden, Kent, can see the Plans and Specification on and after WEDNESDAY, 7th AUGUST next, upon application to the Rev. J. C. TUSS BRALE, Ivy Court, Tenterden, Kent; or at our Offices, 37, Bedford-row, W.C. Tenders to be sent in to us on 14th AUGUST. The lowest or any Tender will not necessarily be accepted. Quantities to be obtained on application to us.—GOODWIN & BUTCHER, 37, Bedford-row, London, W.C.

SUFFOLK GENERAL HOSPITAL, BURY ST. EDMUND'S.—To BUILDERS.—The Committee appointed by the Governors are desirous of receiving TENDERS for sundry ALTERATIONS and ADDITIONS to the above HOSPITAL. The plans and specification may be seen upon application at the Hospital, or at the Office of the Architect, on and after the 1st day of AUGUST next, where the terms of contract and bills of quantities may also be had. The Tenders to be sent in by post, or otherwise, addressed to the Architect, on FRIDAY, the 9th day of AUGUST next. The Committee do not bind themselves to accept the lowest or any Tender. JOHN HENRY HAKEWILL, Architect,
50, Maddox-street, London, W.

TO BUILDERS.—NEW CHURCH, St. George's, formerly Pain's-lane, Shropshire.—TENDERS are required for this work. The plans, prepared by Mr. STREET, of 33, Montague-place, may be seen on application at the Office of the Lilleshall Company, St. George's, on and after the 3rd of AUGUST. Tenders to be sent in on the 20th of AUGUST, before ELEVEN o'clock, A.M. to the Rev. WILLIAM ALLEN, St. George's. The lowest or any Tender will not necessarily be accepted. St. George's is one mile from the railway station at Oakengates.

WELCHPOOL WATERWORKS.—Persons desirous to CONTRACT with the Local Board of Health for the District of Welchpool, in the County of Montgomery, for the CONSTRUCTION of a RESERVOIR, capable of containing about 460,000 cubic feet of water, and other Works in connection therewith, may inspect the drawings, specifications, and forms of Tender, at the Offices of the undersigned, or of ROBERT DYMOND & SONS, Surveyors, Exeter. The Board do not pledge themselves to accept the lowest or any other Tender; and no Tender will be considered unless made in the form deposited with the specifications. The Tenders must be sealed, and endorsed "Tender for Reservoir," and delivered on or before the 24th day of AUGUST, 1861, at the Office of ALFRED MEREDITH, Clerk to the Local Board of Health, Welchpool.

WELCHPOOL LOCAL BOARD of HEALTH.—Persons desirous to CONTRACT with the Local Board of Health for the District of Welchpool, in the County of Montgomery, for the LAYING and JOINTING of Stoneware and Cast-iron SEWER PIPES, the CONSTRUCTION of Brick SEWERS, the Deepening and Improvement of the River Lleddan, and other Works, may inspect the drawings, specifications, and forms of Tender at the Office of the undersigned, or of ROBERT DYMOND & SONS, Surveyors, Exeter. The Board do not pledge themselves to accept the lowest or any other Tender, and no Tender will be considered unless made in the form deposited with the specifications. The Tenders must be sealed and endorsed "Tender for Sewerage Works," and delivered on or before the 24th day of AUGUST, 1861, at the Office of ALFRED MEREDITH, Clerk to the Local Board of Health, Welchpool.

MONTGOMERYSHIRE.—WELCHPOOL LOCAL BOARD of HEALTH.—Persons desirous to CONTRACT with the Local Board of Health for the district of Welchpool, in the county of Montgomery, for the SUPPLY of STONEWARE SEWER PIPES, and other articles, may, upon payment of 5s. obtain a copy of the specification and form of Tender on application to ALFRED MEREDITH, Solicitor, Welchpool; and further information may be obtained at the Office of ROBERT DYMOND & SONS, Surveyors, Exeter. The Board do not pledge themselves to accept the lowest or any other Tender, and no Tender will be considered unless made in the form deposited with the specification. The Tenders must be sealed and endorsed "Stoneware Pipe Tender," and delivered on or before the 24th day of AUGUST, 1861, at the Office of ALFRED MEREDITH, Clerk to the Local Board of Health, Welchpool.

MONTGOMERYSHIRE.—WELCHPOOL WATERWORKS.—Persons desirous to CONTRACT with the Local Board of Health for the district of Welchpool, in the county of Montgomery, for the SUPPLY of CAST-IRON PIPES and other CASTINGS, may, upon payment of 5s. obtain a copy of the specification and form of Tender, on application to ALFRED MEREDITH, Solicitor, Welchpool. Any further information may be obtained at the Office of ROBERT DYMOND & SONS, Surveyors, Exeter. The Board do not pledge themselves to accept the lowest or any other Tender, and no Tender will be considered unless made in the form deposited with the specifications. The Tenders must be sealed, and endorsed "Iron Pipe Tender," and delivered on or before the 24th day of AUGUST, 1861, at the Office of ALFRED MEREDITH, Clerk to the Local Board of Health, Welchpool.

NEW MARKET HALL, LONGTON, STAFFORDSHIRE.—Builders and Contractors desirous of TENDERING for the ERECTION of the above, are requested to forward their names, accompanied with references, to the Architect, Mr. JOHN BURRELL, 27, Market-street, Longton, on or before the 12th instant. Ironfounders and others desirous of TENDERING separately for the IRON ROOFING, COLUMNS, GIRDERS, &c. in the above Market Hall, are also requested to forward their names, accompanied with references, to the Architect, as above.

GEORGE YOUNG, Clerk to the Commissioners.

Longton, August 1st, 1861.

NORTH EASTERN RAILWAY.—To BUILDERS.—The Directors are prepared to receive TENDERS for the ERECTION of a NEW STATION at Harrogate. Plans and specifications may be seen, either at Newcastle or York, on application to Mr. PROSSER, the Company's Architect, on or after FRIDAY, the 2nd AUGUST. Sealed Tenders, marked "Tender for New Station at Harrogate," to be sent in to the Secretary not later than TWELVE o'clock at noon, on THURSDAY, the 15th AUGUST. The Directors do not bind themselves to accept the lowest or any Tender.

York, 22nd July, 1861. J. CLEGHORN, Secretary.

TO BUILDERS.—TENDERS are required for the ERECTION of FIVE SMALL HOUSES, near Cadogan-terrace, Sloane-street, Chelsea. The drawings and particulars can be seen at Mr. Eppy's Office, 21, Lincoln's-inn-fields, from ELEVEN till FOUR o'clock.—It is distinctly to be understood that the lowest or any Tender will not necessarily be accepted.

C. W. EPPY, Architect.

TENDERS for FARM BUILDINGS.—Persons who desire to TENDER for the ERECTION of a FARM HOMESTEAD, REPAIRS to HOUSE, &c. at Gate-court Farm, Northrain, Sussex, may inspect specification and plans on application to the tenant, or at the Offices of Messrs. HASLAM & BUCKLAND, Land-Agents, 89, Cannon-street West, London, E.C.

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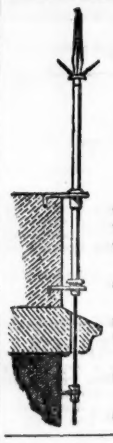

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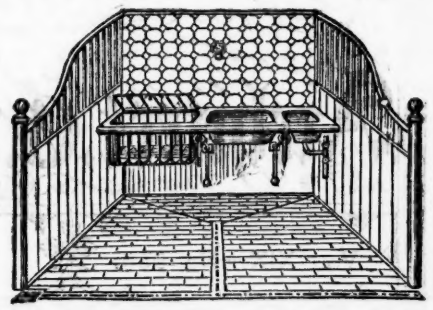

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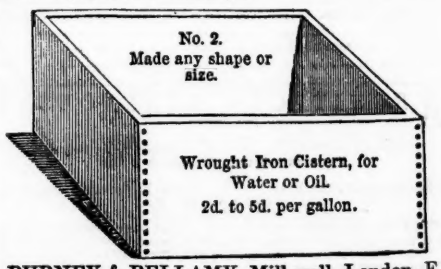

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The Builder.

VOL. XIX.—No. 965.

The Lighting of Theatres.—The Paris Opera-house.

N our recent articles on the subject of the machinery and arrangements in theatres, we omitted to mention a contrivance which we were acquainted with, and which was brought last month into actual use in the Paris Opera House, and seems to be the first step to a different mode of lighting the whole *salle* and stage in this class of buildings. The immediate improvement effected consists in an arrangement of the *ramp*, or "float," by which the chief objections to the old method of lighting the stage, are done away with. Our readers are familiar with the principal heads of the subject of theatre-planning, and not merely as it has been discussed in Paris; but it may be convenient that we should state again what the objections were to the "ramp," and give some further particulars of suggestions which had been made just previously to the experiment at the Opera House of the Rue Lepelletier. We need hardly add that we long since, offered hints as to a substitute for the "float;" and further it will be found that the contrivance now adopted in Paris is only a very ingenious combination of an arrangement of reflectors, with an enclosure of the burners, and with means of supplying air and of conduction of the deleterious products, identical *in principle* with arrangements in use, though far too slightly so, in public buildings, in England.

The first objection to be mentioned as applicable to the London and Paris theatres generally, and still to the Paris Opera House, with the one though important exception, relates to the absence of such means as we allude to, of conduction of the products of combustion. The chief attempt made, in this point of view, consists in the arrangement of the "ventilator" in the ceiling of the "salle," which however, in combination with the position of the *lustre* or chandelier, is inefficient or deleterious. The upper boxes and galleries are oppressively hot; the view of the stage is interfered with; and whatever there is of ventilation is chiefly productive of a current from the stage, which carries sound up into the "ventilator" instead of its passing to the audience. As regards the "float;" the danger for dancers is considerable, as shown by sad accidents; the obstruction not only by the reflectors, but by the visible smoke, is great; whilst the heated air is unfavourable in every respect to the actors and to their efforts, and the light dazzles their eyes. In an article on the "Ventilation of Theatres and Hospitals"* we spoke of the suggestions of Mr. Trélat, General Morin, Mr. Bonnafont, and others, by whom the desirableness of conducting away the products of combustion, or of some system of "exclusive lighting," was fully recognized. The last-named of these writers advocated, in place of the "float," the contrivance of a light from above, with reflectors. Dr. Tripier's several "notes" on the Ventilation of Theatres, in the "Annales d'Hygiène Publique et de Médecine Légale," may be procured in London.* He appears to have given his attention chiefly to the question of ventilation, and recommended a shaft and agent for extracting from the floor of the pit and ceilings of the lower boxes, and the admission of air from above, or immediately in front of the proscenium, as well as from the back of the stage in winter. He also seems to have had an impression of an advantage in doing away with the central lustre, though perhaps only to substitute for it small lustres as intended by Mr. Charpentier of the Opéra Comique on the construction of that building. Little improvement, however, practically, was attempted till last month in the Théâtre Impérial de l'Opéra.

Our notice of the contrivance there, is derived from a careful inspection in the house and below the stage, for the opportunity of making which our representative is indebted to the kindness of Mr. Martin, the *Secrétaire Général*. The suggestion of the actual contrivance is due to Mr. Lissajous, the professor of Chemistry and Physics in the Lycée Saint-Louis; and the work and much of the credit must be placed to the account of Mr. Lecoq, of the firm of Messrs. Melon & Lecoq, of the Rue St. Denis, who arrange the general lighting of the theatre. The present arrangement is not only to be regarded as fully successful, but as pointing the way, as we have intimated, to the adoption of a similar principle throughout the house; and designs with this object are, we believe, already in hand. The following particulars will be sufficient for the moment; and London managers should apply to the manufacturers in Paris, who will we hope derive profit thereby, in this country.

The gas-burners in a row, are placed 80 centimètres below the stage, where they are completely enclosed. The luminous rays are gathered by opposed reflectors of curved form in section, and projected to the *scène* through a conveniently inclined slit or opening in that part of the contrivance which is necessarily above the stage, extending the length of the "ramp," as of the row of lights below, and which opening is glazed with ground glass. The eyes of the actors are not dazzled; and sitting in the pit, we can say there is a very decided gain for the spectators. Some of the principal singers were at first not pleased with the change; but such objections, we believe, may disappear when it is discovered that sound will now more readily than before, reach the audience. It remains to be explained that the products of combustion being passed by the several chimneys of the burners into the long horizontally-placed light-reflecting recipient, pass from that by transverse ducts (of terra-cotta) into a pipe or channel placed parallel to the former, and connected at each end, that is each side of the house, with a pipe placed perpendicularly and ending above the roof. There may be a question as to the quantity of light, as at present arranged; but in the diffusion of the light, as well as those respects which are obvious, the system is a great improvement on the old one. There is so little danger to persons on the stage, that we are told a cambric handkerchief can be dropped on the "ramp" without being ignited. There is considerable heat in the place below the stage, where the lights are attended to, so much so indeed as to lead to the idea of danger; but this, it is right to say, is disputed by every one most interested in the truth. There need be no danger. The orchestra complained of heat, but that may be easily corrected; or no doubt, has been. The elevation of the metal-case, so to call it, as above the stage, is less than that of "the float," by so much as 15 centimètres; so that from this circumstance, the view for the audience is improved. The best mode of treating decoratively that which comes into view, will be found out: the dead brown or chocolate colour, might be improved upon. After all, it is a question whether an arrangement with the burners separately ventilated, might not have been made to produce equally advantageous results. There is at least, no reason now for retaining the system of the London theatres. We should add, respecting the arrangement at the Paris Opera House, that as the leader of an orchestra must be conspicuous, it has been there found necessary to affix a couple of ordinary lights to his desk. The expense of gas, is admittedly, considerably more than that with the old arrangement of the "float."

We have given the credit of the contrivance to those by whom it has been introduced at the Opera House. It is however right to say, that besides what we have already referred to in England, the suggestions of General Morin seem to have pointed to an arrangement exactly similar. The whole subject of the ventilation and lighting of theatres continues to occupy much attention in Paris: a commission presided over by Mr. Dumas has been some time engaged with the subject; and great improvements are looked for in the Circus and the Théâtre Lyrique, which are approaching completion, as well as in the new Opera House and the other theatres about to be commenced.

Relative to the success of the arrangement we have spoken of, as it is in the Opera House of the Rue Lepelletier, something is to be credited to the original formation of the building. The floor o the pit has a considerable rise; so that, from all causes, the feet of the actors, and floor of the stage, may now be seen from nearly all the benches of the pit. The other stage arrangements at this Opera House are vastly inferior to those of such theatres as the New Adelphi in London, if not to some others in France. The confusion in the passages and dressing-rooms is deplorable; and of the staircases in the house, it may be sufficient to say that there is one, like the steps down a certain cliff to the sea-shore at Scarborough, with not a turn, and with little in the manner of landing, to break a fall from top to bottom of the house. It is not, we may assume, such features of the old plan, which the French are about a second time to repeat.

Referring to the new building, we ought to state that the architect, Mr. Garnier, has been some time appointed; and it is expected that early in August, the works will commence on the site originally chosen. The report on the last competition of selected architects was very short; and did not offer any explanation of the course that had been taken. Before stating what may be gathered as to the design, we may mention that the question of the new building and the mode of defraying the cost, was lately the subject of a report by a Commission of the Corps Législatif, which affords some interesting information respecting the manner in which works of the character in question, are pursued in France. It was unanimously decided that the Opera ought to remain a national institution; and that a new building was required. Respecting the site, it was held that the first decision ought to be adhered to. There would be an opening to the boulevard, of 60 mètres,—the breadth of the Boulevard de Sébastopol being but 34 mètres. As to the question whether the ground had been obtained under reasonable conditions of cost, the Commission held that considering the quarter of Paris, the ground had been so obtained, since it had cost an average of 715 francs the square mètre, whilst ground in the neighbourhood was now worth 1,500 francs to 2,000 francs. On the fifth question, whether the expense should fall upon the State entirely, or whether the city of Paris should contribute, the result was a formal demand with this latter view. The gratuitous cession of the site was at the same time suggested as meeting the object. But, the Prefect of the Seine declined all participation in the cost of the building; and he was supported by the Government. The reasons of the refusal were the expense already accrued to the city by the street-improvements, and open spaces especially connected with the new building,—an expense

* See page 172, *ante*.

* H. Baillière.

exceeding 11,400,000 francs,—and the expense of other improvements which might be called for,—also the contributions of Paris generally to the State, and the fact of the aid given to the realization of certain plots of ground the produce of which is to be appropriated to the cost of the Opera House. The Government added as a general consideration, that like the Théâtre Français, and the Opéra-Comique, the Imperial Academy of Music was a national institution, "subventioned" by the State; and that it was desirable not only to preserve the direction in the Government, but to prevent all possible doubt on the subject; and that by the State charging itself with the cost of the building, and the City with that of the streets, each was following its proper part. The Commission therefore deferred to the view of the Government. The expense, the Commission reported simply the inability to give conclusively: an amount of 12 millions of francs for the building, was only named. We may suppose the State is about to expend on this business, at least 880,000*l.*, since, in the report, 22 millions of francs are mentioned, or 10 millions for the acquisition of 14,000 mètres of ground, and 12 millions for the building and expenses. That would make the whole cost as stated, or the cost of the building, 480,000*l.* There seems, however, no reason to doubt that the large outlay here named will fall again into the national exchequer, from the produce of the sale of lands, as of the existing Opera House, part of the Parc de Monceaux, the district called Trocadéro, and others.

Opera appears to have made its entrance into France in the year 1659, if not 1581. Ten years after the first-mentioned date, the Abbé Perrin commenced a speculation in a building in the Rue Mazarine. Associated with him was a certain Marquis de Sourdéac, very skilful in stage machinery, and said to be the inventor of nearly all that is now in use in Paris. In 1672, the first undertaking having come to an end, letters patent were granted by Louis XIV., to an Italian named Lully. Their first sentence says,—

"The sciences and the arts being the most considerable ornaments of states, we have not had more agreeable relaxation, since we gave peace to our people, than to revive them in calling near to us, all those who have acquired the reputation of excellence in them, not only in the extent of our kingdom, but in foreign countries; and to oblige these persons further to perfect themselves in them, we have honored them with our goodwill and our esteem."

But it was not till 1781, after several changes of abode, that the lyric drama in Paris was installed in a building erected especially for it. What was erected however, was intended only as a temporary building. It was built in seventy-five days; and it still remains; it accommodates 1,800 persons; and it is now known as the theatre of the Porte-Sainte-Martin. In 1794 the Opera was transferred to a building which had been erected on the site which is now that of the Square Louvois, in the Rue de Richelieu. This was the work of the architect Louis, considered so successful as to be worthy of imitation in the present building, and we may say in the new one. The original of all these buildings, for the main features of plan at least, was the theatre at Bordeaux, also by Louis. The new building however, no doubt will be very different in all the accessories of the stage and "salle;" and the "salle" itself may be somewhat higher in proportion. In 1820 the Duc de Berry having been assassinated in coming out of the theatre of the Rue de Richelieu; and the Bibliothèque having been always deemed endangered by the vicinity of the other building, the Opera House was demolished. The present Opera House was opened in 1821, having been built in one year by the architect Debret. It was intended only as a temporary building; it is in great part mere wood and plaster; and to this circumstance, as mentioned in a former article, has been attributed, though surely without entire reason, its remarkable sonority. The cost appears to have been only 2,287,495 francs 14 centimes; but the hôtel Choiseul was appropriated to the service of the administration and dependencies.

The suitableness of the present building in the point of acoustics, has led to the retention of the form of the *salle*, as nearly as possible for the new building. The opening of the proscenium will however be greater. For the following information we are in part indebted to the *Presse* and other French journals.

The projected buildings will cover an area of 11,226 mètres. Open space to be laid out as gardens or plantations will absorb 2,774 mètres additional. The whole is about double the area of the existing Opera House with its courts and passages. The general form on plan is that of a parallelogram with retrenched angles. This is flanked by two pavilions. That in the centre of the lateral façade westerly, and which will be in the axis of a new street to the Madeleine, will be for the entrance of the emperor: the opposite one, in similar position with regard to the new street to the Chaussée d'Antin, will be for the entrance of all persons who arrive in carriages. Between 400 and 500 carriages, it is supposed, may arrive. Persons coming on foot will enter at the principal front, south.

The number of places provided in the new house will be about 2,000; the number in the present house is stated as 1,750 by one authority, and 1,950 by another. Each box will have a saloon, and considerable space will be allotted for each seat in the house. The *Presse* hopes that the plan of the house as on paper, will be modified by the addition of "*loges découvertes*" in advance of the principal tier of boxes. For this *balcon*, we may say, there is a good substitute in the present house, in the arrangement of what on plan are the back rows of seats of the pit. These are separated from and raised considerably above the other seats: indeed they are nearly on the same level as the seats of the boxes. It is stated that the existing Opera House affords on each performance, receipts amounting to 10,000 francs, or 400*l.*, and that half as much again ought to be provided for, also that there is every reason to anticipate a demand for any number of good places that could be planned.

The opening of the proscenium will be the same as that of La Scala, 15 mètres,—2 mètres more than in the old house. The dimensions of the house, however, we understand, will be also increased, so as to preserve the present proportions, unless with the slight exception already named, of height. The stage will be much larger each way, and mechanical contrivances will take the place of much manual labour. Warehouses and workshops will, if we read rightly, be provided on a different site. The recent destruction of accessories of that kind, of the present Opera House, which were so detached, shows the advantage of the separation. Green-rooms and places for practice and study will be placed in the rear of the stage, but contiguous to it; whilst in the rear of all, will be the offices of the administration and apartments of the chief functionaries. It seems, however, that the area of ground has not been adequate: our authority regrets that there can be no court or sufficient breathing-space for the 700 or more persons, attached to the stage, in the intervals of their duties; and suggests how an extension of the site might be arranged.

The grand staircase will have some resemblance to that of the Doria palace at Genoa, as well as that of the theatre at Bordeaux. At the extremities of a vestibule will be secondary staircases communicating with all the tiers of the house. These staircases will be semicircular on plan, with superimposed arches. There will be a covered way of communication, externally, forming nearly an entire peristyle to the building. As regards those who come in carriages, they will traverse a corridor to a hall which is placed exactly under the "salle," somewhat on the arrangement of the vestibule of the Théâtre Français. Around this waiting-hall is a gallery, which has a communication with the vestibule principal front. We hesitate at present to adopt the view of the writer in the *Presse*, that the passages are too long, and that the entrances for foot-people and persons arriving in carriages ought to be each where it is now proposed to place the other; and it is evident that the distribution of the crowd will be better provided for, than generally it is in theatres.

In the external character of the design, there is not we apprehend so large an amount of new thought as might have been anticipated. The "Garde Meuble" of the Place de la Concorde and the colonnade of the Louvre are mentioned as having influenced the design; and our recollection of what was exhibited on the occasion of the first competition, induces us to think such a statement correct. The distinctive character of a theatre however appears in the crowning feature, which is the upper portion of the "salle;" and this, with the details of sculpture and ornament; the visible purpose of the external *loggie;* and the actual differences which there may be in buildings described as the same, or even designed after a model, and the talent of the French architects, combine to make us believe that the Paris Opera House will be successful in external effect at least. It is likely to be completed in three years' time.

PETERBOROUGH CONGRESS OF THE ARCHÆOLOGICAL INSTITUTE.

At the previous meeting of the Institute, when the letter of Mr. Hopkinson, of Stamford, was read, suggesting that the next should be held at Peterborough, it was received with great satisfaction by all those members who for so many years had enjoyed the pleasure of that kind-hearted old gentleman's society, and who regretted much his absence on the last two or three occasions.

To Peterborough, then, we came. This town is certainly the Malines of England, for every train in the kingdom seems of necessity to be obliged to come here. Those who lay awake, for to sleep was impossible until you got accustomed to the noise, were under the impression that there was a congress of all the screams of all the locomotives; and it appeared as if some of the engines that were for ever getting in each other's way were giving, *in alt*, an imitation of the lively discussion that one occasionally hears in London between a cabman and a waggoner.

Some members of different fancy were thinking that all this noise arose from the large numbers that were coming to attend the Institute. But when the hour for meeting arrived this illusion was soon dispelled by the smallness of the attendance. Even the president was absent, from some mischance, notwithstanding the numerous rails conveying to this spot. The opening was of a very mild character. The Bishop and Dean were absent from indisposition, and the task of welcoming us devolved upon the Rev. Canon Argles, who performed this duty briefly but gracefully. I think we were unlucky in meeting in a city where there is no corporation; for, if the civic authorities have not so much knowledge, they make up for it in enthusiasm and hospitality; of which we have a lively recollection in our good friend who was mayor of Gloucester, and an equally favourable example in the present mayor of Stamford, of whom more presently.

The best thing on this day was a paper read by the Rev. Thomas James, of Theddingworth, "On the Archæology of the County of Northampton." He playfully stated that he should be guilty of plagiarism, as he intended to borrow from an article that had appeared in a popular publication; but he had the word of the anonymous author that he would not complain of the appropriation. This elicited much mirth and applause, as it was generally known to whose pen the *Quarterly* was indebted for its very able exposition of the county; and therefore, if there was any robbery, Peter and Paul were the same person. The paper was an epitome of that article; and, besides reproducing its more known archæological features, it stated, for those who had not kindred tastes with ourselves, that even sporting, for which this county is famous, could take its stand on the ground of antiquity; for the Pytchley hunting could trace its pedigree as far back as the "Domesday Book," wherein its special privileges are recorded. He concluded by saying, that "in Northamptonshire they would find the oldest church, the oldest Christian monument, and the oldest council-chamber; great battle-fields, and a noble cathedral; a county plentifully stored with the seats of

nobility and gentry; a county in which a peculiar spirit prevailed; and, as Fuller said, 'a people speaking the best English spoken in England.'" This gave good promise for our future investigations, and fully justified the choice of the locality.

The thanks of the meeting were proposed in eloquent terms by Lord Neaves, who, among other happy remarks, said that one of the reasons which made these societies popular was that their purpose was not all dry study; but, as we looked back upon the past, and then visited the memorials of former generations, we viewed things that address themselves to the heart as well as the understanding.

Notwithstanding the excellent elements of success that there were, the epithet I have applied to the first meeting was certainly justifiable. In the afternoon we proceeded to Thorpe, to view the church and tower, both about the date of 1260. There was nothing very remarkable in the former; but the latter is a very good example of a fortified house of the period. It reminded us of the Peel houses to which our attention was called when we visited the north.

In the evening there was a sectional meeting, when Mr. Parker read a paper "On the Ancient Houses, Domestic Chapels, and Hospitals of Northamptonshire." Some thought it was too technical for an early meeting, at which there were many local members who could not be expected to know much about archæology in one day. It was a pity, also, that he nearly disturbed the equanimity of the meeting by dragging in the controversy about Merton College, Oxford. A discussion ensued; and, as an illustration of the freedom of debate that prevailed, Mr. Freeman stated that he knew nothing about domestic buildings, so he would make a few remarks about the special characteristics of the Northamptonshire churches. Those who felt somewhat depressed by the heaviness of this mental repast repaired to the Cathedral Close, when that noble pile was illuminated by a most brilliant moon; and, while walking round to see from every point of view the grand effects which were produced, they experienced a practical interpretation of the meaning of æsthetics.

On Wednesday, at the sectional meeting, Professor Earle read an interesting paper "On the Local Nomenclature of the County;" and the Rev. Abner Brown one "On Certain Existing Landmarks of Early English Ecclesiastical History."

We then made an excursion to Barnack, where the church has a Saxon tower with an Early English spire. The rector, the Rev. Canon Argles, gave a lucid account of the discoveries that had been made on the removal of the rubbish by which its peculiarities had been concealed. An animated conversation ensued on various points in connection with its date and history. Mr. Parker gave his opinion that it was built in the early part of the eleventh century, probably in the time of Canute. He thought that as many old English churches were built by the Danes as the Saxons, and the forms which they took were in imitation of the old wooden churches,—that it was, in fact, as others have said, carpentry in stone.

We then proceeded to Wittering, to Wansford, and to Castor, where the church became the theme of much admiration and critical inquiry. The Rev. Owen Davys gave us the results of his investigations, and the members devoted considerable time to the inspection.

We then returned to Peterborough, where the President, according to the programme, took the chair at the ordinary. I must here again protest against this innovation. It ought to be the public dinner of the Institute, or nothing at all. Why should the members be put to an additional expense for a more uncomfortable dinner, if they do not receive an equivalent in the way of social enjoyment and those ceremonials which are the usual concomitants of festive occasions. What a farce was a toastmaster, if there were to be no toasts. If there are some members who do not like addressing an audience, surely others might be found who would contribute something like eloquence and cheerfulness, as was the case with Lord Neaves, who in his speech produced some radiance, and by his good humour saved the meeting from being one of the most solemn and funereal proceedings. In the evening there was a *conversazione* at the Deanery, where we were most cordially received and most hospitably entertained. The choir of the cathedral, as "ye minstreles in ye gallerie," sang an excellent selection of glees and madrigals.

On Thursday we went to Stamford, calling at Oakham by the way. Here we proceeded to view the church, which has just been restored by Mr. Scott. As a church, I think it is amongst the most perfect for usefulness and beauty. A very large congregation can be accommodated, who can both see and hear; and there was no place that I could discover where any one would feel that irksomeness which results from being "cabined, cribbed, confined." Some of our architects spoke of the great daring there was in many of the structural arrangements; but I am inclined to argue with the lay member who irreverently calls that in which they make their sketches their pattern-book, when he recommended them to copy it entirely as a sample.

We then went to see the Norman Hall, which is in excellent preservation. It is now used for the county courts. The wall is nearly covered with horse-shoes, some of which are of gigantic proportions. This arises from an old custom, that, whenever a peer visits the town, he is made to contribute a horse-shoe. The custodian, with great alacrity, seized upon our president, and secured, or, as a vulgar member said, soon "nailed" his shoe. We then proceeded to Stamford, where we were met by the Rev. C. Nevinson, who took us to the site of the castle, whereon was subsequently built the Nunnery of St. Michael. We then proceeded to St. Martin's Church, the Town Hall, where the city plate was exhibited, to St. John's and St. Mary's Church. In the former there have been some considerable reparations, but the colouring of the roof seemed to me to be very poor. Dates, styles, and records were quoted and discussed; nor must it be supposed that conjecture, in which many of the minds of the Institute are so very fertile, was not represented on this occasion. But, oh, the weather! These peregrinations were made in and between the most pitiless showers. We have been so unfortunate of late, that one or two have suggested to me that it is quite necessary to be amphibious to be a thorough archæologist. We then proceeded to the hotel, where a most sumptuous entertainment had been provided by the corporation. The mayor, Mr. Johnson, took the chair, and performed the part of host, quite in accordance with the spirit of Old English hospitality. Lord Neaves again came to the rescue, and in a most humorous, telling speech, concluded the entertainment; and we proceeded in the highest possible spirits to view the other antiquities, which are very numerous. One of the most striking peculiarities to which our attention was called was at All Souls' Church, where is an Early English arcade, round the external walls. This was regarded as a great novelty of construction. At all the places visited, the Rev. Charles Nevinson gave us all the information which he had been able by great research to acquire; and we were also favoured with an architectural duet from Messrs. Parker and Freeman. Greatly pleased with our reception, and with what we had seen and heard, we returned to Peterborough. Great disappointment was expressed that we did not visit Burleigh, but the rules laid down for visiting that place are quite prohibitory to great numbers. Hopes were entertained that the Marquis of Exeter, seeing what other noble proprietors have done, would have received us in emulation of their kindness and liberality. A few members did, however, visit the house on the prescribed conditions.

In the evening there was a sectional meeting, at which Mr. Bloxam read a paper on "The Monumental Remains in the Cathedral;" and the Rev. J. Lee Warner, a communication on "The Manuscript Chronicle and Chartulary of Robert Swapham."

Friday brought us a large accession of members and visitors, attracted by the announcement that Professor Willis was to lecture on the Cathedral. At the morning meeting, Professor Babbington read a paper on the "Ancient History of the Fens." He was followed by the Rev. E. Trollope, on "The Cardyke," when an animated discussion ensued, more especially in connection with the natural history of the district.

At two o'clock there was a very large assembly in the Corn-Exchange, when Sir Charles Anderson read a short paper, to call attention to the repairs that were now going on at Lincoln Cathedral. He most emphatically condemned the scrapings and washings, which he said were entirely destructive of the harmony and beauty of the building. He exhibited two photographs, showing the scraped and unscraped portions, and he called upon the members to aid him in putting a stop to such desecration.

Then came the great attraction of the meeting, the lecture on the Cathedral, by Professor Willis, who, with his accustomed clearness and fluency, gave us the history of the structure. It is his peculiarity that he has the power of so addressing himself to the subject, that his listeners are under the impression that he is invoking their knowledge, instead of propounding facts with which they were formerly unacquainted. He said the great feature of this cathedral was the few changes of style that it displayed; and when it was considered that the building was seventy-five years in the course of construction, it showed a great reverence was displayed by the builders, and those who employed them, for the original Norman design. He reconstructed the conventual buildings in words; and the arrangements, forms, and characteristics, were presented to our mind's eye as clearly and distinctly as if they were before us in substance. Oh, that some of our lecturers would take a leaf from his book! In the illustrations of his lecture, which he subsequently pointed out at the cathedral, he was followed by a large concourse of persons, who seemed to regret when his remarks came to a close.

In the evening, Mr. J. Lambert "offered some remarks on the Sarum Hymnal, with vocal illustrations." This was as great a novelty as "George Ridler's oven," at Gloucester, only not quite so amusing. Mr. Lambert, in calling attention to the archæology of music, seemed to be quite ignorant of Mr. Wm. Chappell's excellent volumes on that subject. The Dean of Ely both said and *sang* a reply, which prevented any further discussion.

On Saturday we started on our way to Thorney Abbey. The nave of the old church, which was finished in 1108, still remains. Attention was called to the reason of the nave and aisles of the church of conventual buildings remaining when there was no vestige of any other part. It arose from those portions being claimed as the parish church; so that, at the dissolution of the monastic establishments, those to whom the rich lands and endowments were given took no care of the other portions of the buildings; but the parishioners secured that which was claimed as their right, and preserved a place in which they could worship.

Thence we went to Crowland, to view the remains of that abbey. A discussion took place between the rector and Mr. Freeman, who both acknowledged themselves so much corrected by the other, that we were left in a state of doubt; and old Guthlac himself, had he been present, would have acknowledged himself puzzled. We next visited Peakirk, a very curious church, with a Norman triple bell-cot, an arrangement not at all common. Northborough Church and House were the next objects of our attention. This place possessed an interest as belonging to the Claypoles; and there is a tradition that Cromwell was buried here,—that some of his friends, foreseeing the insults to which his remains would be subjected, had his body privately interred on this spot. The building is a very interesting specimen of a fourteenth-century house; with, of course, many additions and disfigurements, made at all periods. In the front of this building we had a short scene from "The Battle of the Styles," which was performed to the silent astonishment of the spectators. We then saw Glinton and Woodcroft House, which gave Mr. Parker another opportunity of displaying his research in connection with early domestic buildings.

The same or rather worse weather accompanied us as on our last excursion.

In the evening we were invited to a *fête champêtre* at the Vineyard, but the kind intentions of our entertainers were frustrated by the elements. Cold and damp, shawls, goloshes, and mackintoshes, are very antagonistic to the gaiety and cheerfulness of outdoor amusements.

On Sunday the Bishop of Oxford attracted a large congregation at the cathedral. He preached on the connection of the past with man's hope of the future. In showing "whence we derived the interest in the past," he affirmed that man must be educated before he can look back; that the uncivilized man only regards the present and his immediate wants. He who considers the past with its memorials, however mean and trivial the remains of these memorials may be, is thereby led to a contemplation of the future to fit him for an immortality.

On Monday we visited Elton, a fourteenth century church; Warmington, a very interesting church, with an Early English tower, and a very rich west door. The spire of this church is esteemed one of the finest specimens in Northamptonshire. There is also a nave with a vaulted wooden roof. We proceeded to Fotheringhay. The church is Perpendicular, of the date 1440. Nothing now remains of the castle, but a green

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mound is said to indicate where the keep was. A beautiful view is obtained from this point; and, whilst standing here, we tried to elicit some remarks from the fair biographer of the captive who made the castle famous, but she referred us to her book. Lord Neaves was then applied to, to say something about the Scottish queen; but he replied, "No, the English brought her here, and they ought to give the explanations."

We proceeded to Tansor and Cotterstock. At the latter church is one of the finest Late Decorated east windows.

We had but a brief view of Oundle, "and so home."

There was to be an excursion to Brixworth on the Tuesday; but I must leave those who went to describe this.

The museum presented a very choice collection of subjects, especially in connection with "the many-faced Mary," as she has been by some one called. The numerous portraits here exhibited justified the sobriquet, for never was anything so extraordinary as the difference of the features at various times of her life. Love, romance, and adversity must have made her a Proteus. Space will not permit me to give a catalogue, so I must content myself by saying that there was but one opinion as to the success of this part of the Institute's proceedings. The illuminated manuscripts, Hours, &c., exhibited by Mr. Tite and the Rev. J. Fuller Russell at the Society of Antiquaries, were transferred to this place, and excited much attention.

And now to sum up the result of the meeting. As will be seen from the preceding remarks, the architects "had it." We visited more churches than on any previous occasion; and all our proceedings had that branch of art as its leading feature. In this respect it was a success, but socially there was a great falling off. Save and excepting the generous hospitality of the dean, we saw no other interior.

This was the first attendance in that character of our new secretary, Mr. Warwick Brooks; and his kind attention and courtesy to the members evinced that, in connection with his other qualifications, his appointment is one upon which the Institute may congratulate itself.

It would be wrong to leave without recording one fact, which is most worthy of all commendation and general adoption. The dean has directed that the cathedral shall be open at all times. At different parts are suspended printed notices of the building, directing attention to the best points of view, its dates, and descriptions of its style. Any one can, therefore, pursue his own inspection, enjoy his own reflections, and indulge in his own sentiments and contemplations without being shackled with the gabble of an ignorant verger. And so farewell to Peterborough.

F. S. A.

BRITISH ARCHÆOLOGICAL ASSOCIATION.

The eighteenth annual meeting will be held in Exeter, commencing on the 19th, and ending on the 24th, inclusive, under the presidency of Sir Stafford Northcote, bart.

The following is the general programme—

19th. Reception of the president, members of the Association, and visitors, by the mayor and corporation; president's address; visit to remains of Rougemont Castle, and other antiquities in the city; *soirée* by the Devon and Exeter Institution; paper on the cathedral, preparatory to its examination, by Mr. C. E. Davis, F.S.A.

20th. Visit to various objects in Exeter; examination of the cathedral; excursion by rail to Pynes; reception by the president; visit to Copplestone; Crediton; evening meeting, for papers and discussion.

21st. Visit to Ford Abbey; excursion to Ottery St. Mary; reception by the Right Hon. Sir John T. Coleridge; Cadhay House; evening meeting, for papers.

22nd. United meeting of the Association and the Exeter Diocesan Architectural Society; excursion to Newton Abbott, Haccombe; Compton Castle, by Cockington, to Torquay; St. Michael's Chapel; Torr Church and Abbey; luncheon at Torquay; visit to Islam Chapel and Kent's Cavern; evening meeting, for papers.

23rd. Excursion to Tiverton; Collumpton; Bradfield House; reception by Mr. J. Walrond Walrond; Bradninch Manor House; evening meeting, for papers.

24th. Excursion to Dartmouth; Dartington Hall; Berry Pomeroy Castle; Totnes; evening meeting, for conclusion of the Congress, 9 p.m.

On the Monday following the Congress (August 26th) it is proposed to arrange a party to proceed to Dartmoor, and institute an examination of some of its most remarkable antiquities.

AIR-SPED PARCELS.

The Pneumatic Despatch Company are showing, by experiments, what they can do in the way of transmitting letters and parcels. As most of our readers are aware, the chief feature of the invention consists in propelling a train of carriages through a tube by the creation of a vacuum before them; the tube being, in fact, the cylinder, and the carriages the piston. The locality selected for testing the project was on the ground adjoining the Victoria Railway Bridge at Battersea, and belonging to the Southwark and Vauxhall Waterworks Company and London and Brighton Company, where upwards of a quarter of a mile of the tubing has been laid down; various irregular curves and gradients being introduced to show that hills and valleys would not prevent the effective working of the system. The arrangements have been entirely in the hands of Mr. Latimer Clarke and Mr. Rammell, and the apparatus certainly works very well. With an exhaustion varying from 7 to 11 inches of water, or from 4 oz. to 6 oz. per square inch, the speed is about 25 miles an hour. The tube through which the despatch trucks are drawn is not circular in form, but of a section resembling that of an ordinary railway tunnel; the internal height being 2 ft. 9 in., the width at the "springing of the arch"—the top being semicircular—2 feet 6 inches, and at the "springing of the invert,"—for the tube has a segmental bottom,—2 feet 4 inches. The internal area of the tube is equal to that of a circle 33 inches in diameter, or 855 square inches. The tube is of cast-iron, in 9 feet lengths, each weighing about one ton, and fitted into each other with an ordinary socket joint, packed with lead. Within the tube, and at the lower angles on either side, are cast raised ledges, 2 inches wide on top, and 1 inch high, answering the purpose of rails for the wheels of the despatch trucks to run upon. The latter are made of a framing 7 or 8 feet long, enclosed in sheet iron, and having four flanged wheels, 20 inches in diameter each. The whole truck is so made that its external form, in cross-section, conforms to that of the tube, although it does not fit it closely; an intervening space, of an inch or so, being left all around. Some light India-rubber flanges or rings are applied at either end of the truck; but even these do not actually fit the inner surface of the tube; a slight "windage" being left around the whole truck. There is, therefore, no friction beyond that of the wheels; and the leakage of air, under a pressure of 4 ounces or 5 ounces per square inch, amounts to but little. The air is exhausted, from near one end of the tube, by means of an exhausting apparatus, from which the air is discharged by centrifugal force. Some idea of this apparatus, which is very simple, may be formed by comparing it to an ordinary exhausting fan. It is the intention of the company, now that they have obtained Parliamentary powers for opening the streets to lay down their tubes, to establish a line between St. Martin's-le-Grand and one of the district post-offices, and ultimately to extend their system throughout the metropolis, so as to connect the railway stations and public offices. Mr. Frederick Gye made an early proposition for establishing a system of this kind.

THE SEWAGE FOR THE SOIL.

ANNALS OF A LIQUID MANURE FARM.

The physical improvement of the population is more intimately connected with the improvement of agriculture than is commonly supposed by the public at large, or even by agriculturists themselves. In respect to towns, offensive smells from the decomposition of animal and vegetable matter, whilst they indicate the waste of highly-fertilizing manure, also indicate the generation and presence of potent causes of insalubrity and of preventible disease, at the same time that they display a low state of mechanical and engineering and of administrative art. As to rural districts, all offensive smells arising in the farm-yard, or in the field, from animal and vegetable decomposition, denote the preventible loss of fertilizing matter, loss of money, and bad husbandry. All excess of moisture on land which hinders the permeation of the air into the soil, and which prevents the chemical combinations of manure, and obstructs the free range of the roots of plants, and by evaporation lowers temperature, is injurious to animal and vegetable life, and is productive to men, as well as animals, of the diseases attendant on damp, and denotes a low state of agricultural art. The practical application of these conclusions involves the future profit of agriculture, as well as a great proportion of sanitary improvements.

In a paper read before the Royal Agricultural Society of England by Mr. E. Chadwick, C.B., are particulars as to the arrangements of a liquid manure farm, successfully worked for six years, which Mr. Chadwick obtained from Mr. James Blackburn, now acting as an agricultural engineer; in relation to whom Sir John Forbes, the convener of the county of Aberdeen, gives high testimony. The subject being a highly important one as regards the town-sewage question, and the experiment in question having been very profitable, we propose to give from Mr. Chadwick's paper some of Mr. Blackburn's details of arrangements and cost.

First of all, however, we may state that Mr. Blackburn studied agriculture under a large practical farmer in East Lothian, about thirteen years ago, for two years; and he was previously acquainted with the practice of farming as carried out on his father's estate in the Isle of Thanet. After leaving the East Lothian farm, he laid the foundation of the study of agricultural chemistry under Dr. Gregory at the University of Edinburgh, where he also studied physiology and natural philosophy. He had previously had opportunities of studying practical mechanics at a large steam-engine factory.

Before carrying the principle of liquid manure cultivation into practice, he made examinations of the practical means in use for its application at Mr. Kennedy's, of Myer Mill; Mr. Telfer's, at Ayr; and Mr. Ralston's, near Ayr.

Mr. Blackburn's tanks were 8 feet deep, and the manure tank held 22,239 gallons, and the mixing tank held 25,293 gallons. They were faced with wood,—the rough slabs of the outside of trees, with a dry black mould rammed in at the back. They were covered with the cheapest whole trees with the bark on, and a bed of heather on the top to prevent soil falling through the interstices, and soil or road stuff over the heather. The cost of both tanks, well covered, was about 12*l.* or 13*l.* each, and they last very well. The bottom was a strong holding clay. He used 4-inch iron pipes, except at the extremities, where there were 3-inch pipes. His buildings, from their situation, required a larger extent of pipes than would, he thought, under ordinary circumstances, be necessary. The pipes commonly in use on most of the liquid manure farms are about 3 inches in diameter. He should, to save power, have them much larger. Junctions at right angles were avoided, and the branches led through the soil in a feathered form. There were 3,400 yards of piping, with one hydrant to every 5 acres. The expenses for machinery, and the charges for it per acre, were as follows:—

Expenses of Pipe Irrigation 20 *acres.*

	£	s.	d.
Tanks	25	0	0
Metal pipes, lead, and laying	85	10	0
Cutting drains for do.	2	0	0
Hydrants and brass joints	6	8	0
Manure pumps and fitting	30	10	0
Water-pump and fitting	12	0	0
Shafting for do.	8	0	0
Gutta-percha pipe	19	10	0
For 20 acres	189	18	0
Or 9*l.* 10s. an acre.			

The estimated expenses of pipe irrigation for 100 acres of grass land, 1 hydrant to every 5 acres, were as under:—

	£	s.	d.
4-horse engine with expenses, erecting, &c.	140	0	0
T-pipes, cocks, and branches	29	0	0
3,400 yards of 3-inch and 4-inch pipe	380	0	0
20 hydrants, 25*l.*; lead and laying, 20*l.* ..	45	0	0
2 sets brass joints and 2 unions	5	0	0
2 manure-pumps, 6½ in. diameter 2 feet stroke	60	0	0
Shafting, connecting, and extras	10	0	0
Cutting drains for pipes	10	0	0
2 lengths, 90 yards each, gutta percha ..	40	0	0
Circular brick tanks, 100,000 gallons	100	0	0
Contingencies dependent on locality	50	0	0
	860	0	0

860*l.* at 7½ per cent. = 65*l.* yearly charge.

Pumps will discharge 300 tons daily at 10 hours, and working for irrigation 150 days, at a daily expense of 18s.; which equals for cost of distribution ¾d. per ton, or per dressing of 1 inch deep=100 tons per acre, costing 6s. manuring at the rate of 3 acres daily.

The valuation of the farm, when Mr. Blackburn took it in order to try the experiment with liquid manure, was 632*l.* at high prices; and the value of his subsequent average yield at low prices, since he has got the farm in what he deems passably fair order, has been 1,500*l.*,—that is to say, with wheat at about 48s. per quarter. The extra value of the produce is mainly due, he considers,

to the use of the liquid manure. The large quantities of cattle food raised by its use on a small portion of land, and consumed in the stall, afforded the means of heavily manuring the remainder of the farm, which comprises 128 acres of tillage, and is situate on the east coast of Scotland, and within a mile of Stonehaven.

In this case the irrigation was underground; and Mr. Blackburn says, as to the surface method adopted at Edinburgh, that he would not think of having recourse to it, either as a question of agricultural production, or as a sanitary question. The evaporation from the surface, which is one of a swamp, is at times very offensive, and must be very noxious. The proper dilution of his own farm manure is about as six to one, which extinguishes smell: when he has applied it in a less dilute state, as about three to one, it is offensive in its application, but in a very short time it is absorbed and loses all smell; and altogether the smell is less than in the common applications of dry manures. But he would engage that town sewage, even diluted as that at Edinburgh, may be applied inoffensively as well as more productively.

1825.

SOME GLEANINGS; LITERARY, ARTISTIC, AND SCIENTIFIC.

SOME time ago we gave a few notes of events which occurred about the year 1825, and remarked upon the changes which have taken place in what seems, to read of, a brief space of time. We now go to some other sources, published just thirty-six years ago, for particulars of certain circumstances which are in the recollection of many now in the prime of life, but which sound of far more ancient date. During the period named, a generation of the people passed away: the chief number of the men of note whose names occur in this gossip of the past, are now no more: valuable ideas and suggestions, which were then looked at with doubt and curiosity, have become established facts; and more wonders have been wrought, and greater progress in various ways has been made, than in all the years since the reign of Queen Elizabeth. There are useful ideas to be got from all comparisons with our own state, and that of other periods: we therefore take another opportunity of having a brief gossip about some doings in 1825.

One of the books to which we just now refer is "The Circulation of Useful Knowledge," illustrated with woodcuts. Amongst these are some views of places celebrated in history, strange-looking representations of animals, diagrams, &c., to explain the lectures of eminent professors; view of the grand oratorio at Drury-lane, in which Robinson, Tinny, Bedford, Edmunds, Braham, Miss Graddon, Bellamy, Mrs. Bedford, Miss Love, &c., were prominent singers. There are accounts of fights with dogs and other animals, and of other barbarous sports. On one of these occasions the London reporters gave a very minute and circumstantial account of what occurred. It, however, happened that means were taken to prevent the event from taking place; so that the public had the advantage of the excitement of reading the particulars without the poor animals being put to suffering.

Nor were the artists always free from trouble; for below a woodcut of a gentleman's rustic villa we find the following: — "The common adage says,—'Mistakes happen in all families;' and it appears we are not exempt; for, through erroneous information, our artist has this week substituted the house of Willitton, an eminent solicitor, for the site of the interesting story of George Barnwell, which we are obliged to defer till next week." We will, however, pass over these matters, and look in at some of the picture galleries, and glance at some of the talk of the town on literature and art.

Mr. Etty's picture of "Pandora crowned by the Seasons," is exhibited at the British Institution, and is purchased by Sir Thomas Lawrence for 150 guineas. At the British Gallery is Mr. Danby's "Enchanted Island," bought by John Gibbons, esq., for 200 guineas. "The Champion," by Mr. Eastlake, is sold for 150 guineas. "The Burial of Christ," by Mr. Northcote, R.A., for 150. Amongst other works of art we notice that "Rummaging an old Wardrobe," by Mr. Good, is purchased by Mr. Hutton for eighty guineas.

Sir Thomas Lawrence presents a very fine copy of the lower part of the famous "Transfiguration of Raffaelle," executed by Romney, to the Royal Academy. We also learn that this work, executed by an artist who for a time divided the attention of the town with Sir Joshua Reynolds, remained, for some time after the death of Romney, in a neglected state, in his house in Cavendish-square, which he had occupied (since the residence of Mr. Shee), and was afterwards claimed by the relatives, and purchased by Sir Thomas Lawrence for three or four pounds. It is executed on paper in bistre, and varnished.

The newly-discovered edition of Shakspeare's *Hamlet* is an attraction; and, in the month of February, is in active preparation at Covent Garden Theatre, and will shortly be brought forward in the costume of the time(?) and appropriate scenery.

The Duke of Devonshire has purchased the first edition of *Hamlet* from Messrs. Payne & Foss, for nearly 200 guineas; and the black-letter mania is as violent as ever. Evans sold on Monday the following bagatelle for twenty-two pounds ten shillings:—"Here beginneth a Lyttel Boke, that speaketh of Purgatorye, of the Paynes that be therein," &c. Messrs. Green and Mr. Graham rival each other in daring balloon ascents, and Mr. McCulloch is delighting the intelligent part of the community by his lectures on political economy at the London Tavern. Dr. Roget is also lecturing; and, at the Royal Institution, remarks on peculiarities in the mechanical organization of the parts of animals, &c.

The 16th of April (1825),—Poor Fuseli died this morning at the Countess of Guilford's, Putney-hill. He has been upwards of twenty years professor of painting and keeper of the Royal Academy. Fuseli was a native of Zurich, and came to England at an early age, more with a view of making literature his study than art. While yet undetermined on speculating, as he said, on the great resolve of life, he took some of his drawings to Sir Joshua Reynolds, and asked his candid opinion whether he thought he had any chance of success as an artist. The president was so struck with the conception and power displayed in them, that, after viewing them attentively, he said,—"Young man, were I the author of these drawings, and offered ten thousand a year not to practise as an artist, I would reject the offer with contempt?" This decided him; but it was not until the opening of his Milton gallery, about the year 1798, that the extent of his intellectual acquirements, his wondrous imagination and fancy, were fully appreciated. Amongst these works, the "Ghost of Hamlet" has been considered the grandest production. Mr. Fuseli enjoyed the friendship of many of the most distinguished *literati* of the age. The high opinion entertained of him even in youth by his celebrated townsman, Lavater, was shown by his putting into his hand at parting a small piece of paper, beautifully framed and glazed, on which he found written in German, "Do but the tenth part of what you can do." "Hang that up in your bedroom, my friend," said Lavater, "and I know what will be the result." The result did not disappoint him. Their friendship ended only with life; and, on the part of the artist, was continued to Lavater's son. Mr. Fuseli enjoyed excellent health, probably the result of his habitual temperance. He was also an early riser; and, whether in the country or in town, in summer or winter, was seldom in bed after five o'clock. He attained the age of eighty-seven without the least falling off in his intellectual powers.

The Water Colour exhibition commences its twenty-first season, and the novelty that drew its first visitors has been succeeded by the still stronger attraction of its sterling merit. There is a "Distant View of Ulleswater," by De Wint. The "Reconciliation of Selim and Nourmahal" is a distinguished picture by Sephanoff. The "Ponte di Rialto," by Prout, is a fine performance; and there are admirable drawings by Feilding, Richter, Cox, Varley, Hill, Barret, Heapy, Glover, &c.

At the Royal Academy, Mr. Fuseli's picture of "Comus" is greatly admired; as are also Mr. Hilton's, "Christ crowned with Thorns;" and "Woman at the Tomb of Christ," Westall. Mr. Wilkie has a "Scotch Family;" and the "Slender and Anne Page," of Leslie is truly humorous. Mr. Hayter exhibits a picture for the Duke of Bedford,—the trial of his ancestor. Sir Thomas Lawrence has several fine portraits. Mr. Danby exhibits "The Delivery of Israel," which is thought to be too close a copy of the style of Martin. Mr. Stodhard's "Titania," is a playful invention; and Mr. Turner's painting of "The Harbour of Dieppe" is splendid in colour and composition. Mr. Ross's picture of "Christ casting out Devils" is well liked; as are also the figures of the "Madonna and Child," by Mr. Westmacott.

When reading these still well-known names, one cannot fail to observe, in the comparatively brief space of time, how busy the hand of death has been in gathering these worthies to the dust. Very few are now left; but notwithstanding, their useful labours are still the means of both pleasure and instruction.

In those years gone by sanitary science was but little cared for or understood: there were, notwithstanding, even then, some men earnestly at work. Amongst these was Dr. Darwin; who, being one day at Nottingham, assembled a large crowd of people around him, and thus addressed himself to them:—

"Ye men of Nottingham, listen to me. You are industrious and ingenious mechanics. By your industry life's comforts are procured for yourselves and families. If you lose your health, the power of being industrious will forsake you. That you know; but you do not know that to breathe the fresh and changed air constantly is not less necessary to preserve health than sobriety itself. Air becomes unwholesome in a few hours, if the windows are shut. Open those of your sleeping-rooms whenever you quit them to go to your workshops. Keep the windows of your workshops open whenever the weather is not insupportably cold. I have no interest in giving you this advice. Remember what I, your countryman and a physician, tell you. If you would not bring infection and disease upon yourselves, and to your wives and little ones, change the air you breathe,—change it many times a day, by opening your windows."

The Peristrephic Exhibition drew crowds to the great room in Spring-gardens. The original idea and execution of a panorama by the late Mr. Barker were highly ingenious; and the diorama was an improvement upon that new field opened for graphic art. The present pictorial display combines the principles of both. It is historical, and comprises no fewer than twelve different views. Amongst these are the "Quarter-deck of the *Victory* at the Death of Nelson;" the "*Redoubtable* on Fire;" the "Battle of Genep;" the "*Bellerophon* in Plymouth Sound, with Napoleon on board," &c.

Amongst the signs of progress and improvement is a large meeting held in the City of London Tavern, for the purpose of advocating the necessity for superseding climbing-boys. Mention is also made of the Hetton Colliery Railway, in the county of Durham. But as this is a private railway constructed without an Act of Parliament, there is little choice of direction, and the engineer was under the necessity of adopting lines and trams by no means advantageous. This was the incline which was used for the conveyance of the coals from the pit to the river before George Stephenson devised his locomotive railway. In the metropolis it is proposed to make the following amendments:—

"The west side of Lancaster-court, Strand, and the east side of St. Martin's-lane, directly behind that side of the court, to be taken down, in order to make a spacious opening from the Strand to the church."

"The north side of Chandos-street, Covent-garden, to be continued in a line to St. Martin's-lane."

"Durham-yard to be opened, and laid out in handsome streets, with coal-wharfs and passages beneath them."

"Exeter Change to be taken down, and also the houses in the Strand that stand between that building and Southampton-street; so that an opening may be formed corresponding with that which will be produced by the removal of the Change."

"Drury-lane to be continued to the Strand, and to have a proper width given to its south end."

"The whole south side of Holywell-street to be removed, with the same side of Butcher-row; likewise St. Clement's Church, and the new space thus afforded to be thrown into the Strand."

"Bell-yard to be opened into Fleet-street, and a width given to it equal to that of Carey-street."

"Middle-row to be laid into Holborn; Chancery-lane to be widened at its two extremities."

"Fetter-lane, also, to be widened at both ends,—at its south end by throwing it into Fleur-de-Luce-court, and at its north end by removing some of the old houses on the east side."

"The area of the King's Bench-walk in the Temple to be continued into Fleet-street, and separated from it only by rails, having openings between them for foot passengers."

"All the houses between Bride-lane and Salisbury-court to be removed, in order to throw St. Bride's Church open to Fleet-street."

"The east side of Ave Maria-lane, the south side of Paternoster-row, the east side of Creed-lane, and the north side of Carter-lane to be levelled, and thrown into St. Paul's Church-yard."

"The east side of Warwick-lane to be thrown back ten or twelve feet."

"Newgate Market to be continued on its north and south sides to Newgate-street and Paternoster-row."

"All the houses forming the south side of the Poultry and the north side of Bucklersbury to be removed, by which a fine opening will be made leading to and displaying the City Mansion."

"In order to clear the back of the Mansion House, the Church of St. Stephen, Walbrook, to be taken down, and rebuilt on a site more to the south."

"All the ground on which stand the houses forming the north side of Cornhill and the south side of Threadneedle-street, from the Poultry to the Royal Exchange, to be thrown into the main street, by which the Bank and the Change will be laid open."

"A street, 50 feet wide, to be cut from the front of the Exchange; to be cleared, to the breadth of 50 feet."

"A street, 50 feet wide, to be cut from the front of the Change into Lombard-street."

"Bartholomew-lane, Finch-lane, and Birchin-lane to be widened 10 feet."

"The south side of Thames-street to be entirely removed clear to the river, and the opening extended from Tower Wharf to the Temple. The north boundary of this quay to consist of a fine range of mercantile warehouses."

"London-wall, from Moorgate to Cripplegate, and all the houses on that side of Fore-street, to be taken down, and a line of new houses to be built upon London-wall, widening the whole street about 12 feet.

"In the spaces gained by opening Lancaster-court, St. Clement's Church-yard, Middle-row Holborn, the King's Bench Walk, St. Paul's Church-yard, the Poultry, Cornhill, and other places, public fountains to be constructed, which may be adorned with statues erected in honour of those patriots, philanthropists, and sages who merit such distinction from their country."

Many of the above changes would be of great advantage, but are not yet in the course of being carried out.

The London, Spitalfields, and numerous provincial Mechanics' Institutions are making head, and Dr. Spurzheim is endeavouring to direct the attention of artists and others to what is called the *craniological science*. He exhibits a variety of skulls to establish his theory of bumps. About this time Dr. Crichton has ascertained that appellation of *thick skull* is no misnomer, as he finds, on an examination of a number of subjects, that the skulls of idiots and deranged people are thicker than those possessed of strong and sound principles. In the Regent's Park thousands of persons are suddenly transported to the interior of Chartres Cathedral or the Chapel at Holyrood.

Various inventions, now common enough, are exciting curiosity. At the London Mechanic's Institute Dr. Birkbeck lectures; and a young man, who has been a miner in his youth, named Roberts, exhibits a hood and mouth-piece, invented by him, to enable persons to breathe and act in impure air. Mr. Ogg, Mr. Pettigrew, and others take interest in Mr. Roberts's experiments.

The erection of the London University is advocated, for it is said that it would be extremely economical. Instead of a liberal education being purchased at the expense of 300*l.* or 400*l.* per annum, it would not cost more than 20*l.* or 30*l.* per annum; and a noble university, erected in the New-road or anywhere else at an expense of 150,000*l.* to 200,000*l.*, would be an honour and an ornament to the metropolis.

Amongst the improvements and inventions it is mentioned that the schooner *Eliza* has returned from the Mediterranean after an absence of six months. This is the first vessel sheathed with leather, and we learn that the experiment has fully answered. A steam packet is about to make the voyage to India. This is the boldest attempt hitherto made for the application of steam to a sea voyage; yet it appears to be calculated with every chance of success. The vessel is of 500 tons burden, and to be fitted up for passengers only. She is to be completed with machinery of the best description by Maudslay. The vessel will be equally adapted for sailing and steaming. She will touch at the Cape of Good Hope to take in a fresh supply of coals and other necessaries; will then proceed to Madras, and finally to Calcutta; and, upon moderate computation, it is estimated that she will make the whole voyage from London to Calcutta in less than two months.

It is reported that the members of the Athenæum Club are about to erect a splendid mansion on the site of the King's Mews, and that the Oriental Club are in treaty for the purchase of Uxbridge House in Savile-row.

The new Fish Company foresaw some opposition to the purposes of forming a West End Fishing Company, to be opened at Hungerford-market.

Forty new churches are to be built in the Highlands of Scotland, for some of the Highland parishes are from 20 to 50 miles wide; and, with all the obstructions of lakes, bogs, &c., will require no ordinary feats of pedestrianship in the minister to enable him to discharge his parochial duties.

It is remarkable for what a number of years we talk about some matters before they are carried into effect. There had been much discussion about the embankment of the Thames; and it is now said that the aquatic promenade will be erected on the south side of the river, in consequence of the late Duke of Northumberland having united with the benchers of the Temple to oppose its erection on the north side. The editor gives a more satisfactory account of the new London Bridge, and finds the numerous workmen driving piles for the foundation. Active preparations are being made for the commencement of the Thames Tunnel; but, as regards the Opera-house, it will not open this season, except on a *small scale*, in the Haymarket Theatre. The building, from some cause, has sunk; and Mr. Peel, from a regard for the lives of his Majesty's subjects, has interfered to prevent Mr. Ebers from commencing operations. The Custom House is found to be in a worse state than was at first supposed; and a project is on foot for a street from Southwark Bridge to the Royal Exchange, the expense of which is estimated at 600,000*l.*, which it is proposed to raise by a tontine. The principal street from Fleet Market will, it is said, be considerably wider than Regent-street, and of striking architecture.

The art of glass-staining begins to receive notice; and in Walworth new church, designed by Mr. Soane, three windows are decorated with this material, under the direction of Mr. Collins, of Temple Bar.

We have already exceeded our present limits, and must conclude these notes with the following.

Companies for establishing railways are rapidly forming all over the kingdom. The Great Northern Railroad is to communicate between London, Manchester, Hull, and the principal manufacturing towns in the north. The Norfolk and Suffolk Railroad Company purpose constructing a railway from London to Norwich, through Chelmsford and Colchester, with branches to Harwich, Ipswich, Bury St. Edmund's, Lynn, and Yarmouth. The probable cost of a straight line from London to Norwich is 555,000*l.* In Yorkshire, a railway has been projected from Bradford, by way of Leeds, to Selby, whence the line is to be continued, on the east side of the Ouse, to Hull. Such is the popularity of these projections, that shares in the Liverpool and Manchester railroad are now at a premium of 100*l.* each, and the demand for them is so great, that they are advertised for.

The *Scotsman* remarks that, "when the steam-coach is brought into use, practice will teach us many things respecting it of which theory leaves us ignorant. With the facilities for rapid motion which it will afford, however, we think we are not too sanguine in expecting to see the present extreme rate of travelling doubled. We shall then be carried at the rate of 400 miles a day, with all the ease we now enjoy in a steamboat, but without the annoyance of sea-sickness, or the danger of being burned or drowned.

It is impossible to anticipate the effects of such an extraordinary facility for communication, when generally introduced. From Calais to St. Petersburg, or Constantinople, for instance, would be but a journey of five days; and the tour of Europe might be accomplished in a shorter time than our grandfathers took to travel to London and back again."

THE RUINS OF THE GREAT FIRE IN TOOLEY-STREET.

It is not possible to form a right idea of this conflagration except by taking a view of the scene of the calamity. The appearance of the great space is extraordinary. Many walls are still standing, rent and cracked by the intense heat. Girders, metal pillars, broken into fragments, are strewed in all directions. In some instances, the thick iron doors which had been put up with a view towards stopping the course of a fire have been so bent that they would be useless for the intended purpose. Near the river, part of a massive basement of granite is left standing, though from this large portions have been shivered.

When looking at the space, one can form some idea of the immense body of flame with which the firemen had here to contend; and, great as has been the damage, it seems a matter for gratitude that the fire did not spread further in all directions. Men are at work digging out the skins and horns of animals, tallow, preserved meat, &c.: immense quantities of rice, dyes, and other commodities, are seemingly mixed together. In places are pieces of vitrified matter, like the clinkers drawn out of a furnace. A sight of the ruins shows very clearly the necessity which exists for a classified system of warehousing articles of commerce. A fireman of much experience who was actively engaged at this fire said that the effect of the extensive store of saltpetre was most extraordinary and destructive, and that the matters were so stored that if it had been intended to make a blaze they could not have been better placed. The pouring of water on the flames seemed but to add to their fierceness.

A visit to these ruins is not without use. It conveys, far better than any words can express, the immense power of fire, and ought to suggest the necessity of providing means for more successfully preventing such wholesale loss. The action of the fire on the various kinds of metal, too, is worthy of attention.

DRINKING FOUNTAIN OPPOSITE THE ROYAL EXCHANGE.

The drinking-fountain, mentioned some time since as in preparation by Messrs. Wills, at the cost of Mr. Samuel Gurney, M.P., for the space opposite the portico of the Royal Exchange, has been opened for public use. It consists of a pedestal and large circular basin, some 5 feet in diameter, of polished granite, and resting on three bronze dolphins. Upon the basin is a circular 6-inch plinth of white marble, with three carved heads of lions. This forms a base for a bronze figure called "Temperance," semi-draped, in the act of pouring water from a slender vase or bottle. The water runs most objectionably from the lions' heads, and from the vase: the stream from the latter, however, as at present arranged, is useless, and sputters over all who are near. In the first instance an inscription on the pedestal, put on without permission, rendered the fountain a memorial of the late Mr. Braidwood; but this, though still partially legible, has given place to a notification that the fountain was opened on July 26th, 1861.

THE OWNERSHIP OF ARCHITECTS' DRAWINGS.

An architect thus writes,—

"To whom do designs belong after the buildings have been erected—to the architect or his employer? To whom do working plans and drawings of details belong after the buildings have been completed—the architect or his employer? It is becoming a common practice for the clerks of works of employers to endeavour to retain all working drawings, and to lend them about, to be used by others; in which course, unfortunately, certain employers give them their countenance, and even sometimes join in it. A few words from you on the law and justice of this course may do good."

We have before now expressed an opinion, founded on custom and common sense, that an architect's drawings are merely his tools, the instruments he uses in performing the duty for which he is paid,—the production of a building;—and that, as a broad fact, they belong to the architect. This view has been more than once admitted by corporations and others; as at Norwich (in the case of their late surveyor) and elsewhere. The ownership would, however, be regulated by so many circumstances, and it seems so difficult to convey to the legal mind a right appreciation of the position of the architect and his employer, that it would be wise for architects to make it clearly understood on undertaking business that all drawings remain their property. Whatever argument may be raised in favour of the employer's right in respect of drawings which are made to form part of a contract with the builder, detailed drawings, it is obvious, are merely instructions,—sometimes even given with chalk on a board or by words alone,—and their return as they are finished with should be insisted on. The names of clerks of the works who allow use of the architects' drawings for other works should be made known, so that such persons might be avoided. The Artistic Copyright Amendment Act now before the House of Lords will, if passed, give architects protection as respects their drawings, even if it go no further, as it should do.

Dragon's Head Water-spout, formerly on the Gewerken Haus at Eisleben.

DRAGON'S HEAD WATER-SPOUT, FORMERLY ON THE GEWERKEN HAUS AT EISLEBEN.

In the course of a series of papers on the Mansfeld Copper-slate Mines, in Prussian Saxony, contributed to the *Journal of the Society of Arts*, Mr. W. P. Jervis, engineer, the writer of them, gives this sketch of a dragon's head water-spout, formerly ornamenting the Gewerken Haus in Eisleben, and now in the Mining School. He says of it,—It is a charming piece of *repoussé* work, attributed to the time of Bruno the elder, *circa* 1600. Many such water-spouts still exist in the vicinity: in former times they were so abundant at Neustadt on the Orla, near Weimar, that Luther facetiously called it the *Drachenstadt*, or "dragon-town." The local use of copper, for many purposes where not generally employed, is very striking. In St. Andreas church, in Eisleben, is a fine brass monument to Herr Von Eveleven; and four magnificent brass chandeliers, valued at 140*l.* each, presented by the people of Nuremberg, in 1610. There are also some ponderous brass candlesticks, apparently of far older date. The town-hall in Eisleben was originally roofed with copper, but this was removed and sold about twenty years ago.

Eisleben owed much to the discovery of the Mansfield Mines. "The gigantic scale," says Mr. Jervis, "upon which these mines are worked is by no means a thing of yesterday, as may be judged by a careful walk over the ground. In approaching Eisleben towards evening from the west, that is by the post-road from Nordhausen, after passing the village of Blankenheim, we ascend to the top of the hill; the eye soars for many a mile around; the steeples and roofs of Eisleben repose peacefully enveloped in gray mist at the foot of the hills, on whose summit the tall forms of many engine-houses, with their gaunt chimneys, are picked out against the sky, while, at a greater distance, the silvery reflection of the lake indicates the spot where the drainage waters are conducted. Around us, on every side, little hillocks, scarcely larger than the graves in a country churchyard, and almost as close together, stretch to the right and left of the road, and have been for centuries overgrown with grass: as we advance, these hillocks, which might at first have escaped observation had they not been pointed out, assume larger dimensions, and present a distinct though partially filled crater: they become dotted over the fields, reminding one of a city of South American ant-hills: each is encircled at the base with a crown of brambles, giving a most singular effect to the landscape, as the intermediate space is highly cultivated land. Every hundred yards we proceed towards the town these mounds become larger and larger as also less numerous; they begin to bear a more rugged appearance, and instead of being clothed with vegetation present their sterile slaty faces to us, for these are newer burrows, which have not been subjected to the disintegrating action of the atmosphere sufficiently long to convert the rock into soil. A local law, common in such cases, stipulates that whoever rents ground covered with ancient burrows should annually bury a certain quantity of the barren mounds, in order to expose the original surface of the soil, and render the land fit for agriculture. Another moment and we have reached Wimmelburg, where the burrows are from 300 to 800 feet long, and 50 feet high, and nothing but a mass of stones. These are what are at present being thrown up by working the copper-slate, at a depth of at least 500 feet."

THE CONSTRUCTION OF WAREHOUSES.

I have read Mr. Hesketh's article on the great fire in Tooley-street, and with much of what he says on the subject I quite agree, but not with all. I agree with him that the Building Act is defective in its provisions for securing a more complete fireproof construction in buildings intended for mercantile warehousing purposes: I also agree with what he says about protecting the outside of windows in some form or other with iron shutters.

He says in the fifth paragraph that the main cause of the spread of fire is to be looked for in the number of windows, &c. I agree with him that it is a bad plan to have windows in warehouses on both sides of an alley 30 feet wide; but if they were on one side only, the fire could not spread across and set fire to the warehouse on the opposite side. Perhaps a clause might be introduced into a new Building Act prohibiting the erection of warehouses with windows so placed. I was resident in London when the old Custom House was burnt down, and happened to be standing at the Tower end of Thames-street, about half-past eight o'clock on the morning of the fire, when I saw the flames burst through the windows and drift across to the opposite side of the street, and set fire to four or five houses. This was said to be caused by the wind setting off the river. Just at that moment there was a report that some barrels of gunpowder were in the cellars. The men immediately left their engines; and when they returned, having found it a false alarm, the fire had got so much head as to gut the houses before it could be put out. I remember well, on looking down the street at that particular moment, that it had all the appearance of an immense furnace. I mention this great fire as confirming what Mr. Hesketh says about windows in warehouses built in a narrow street or alley, having their windows facing each other, and so increasing the danger of fire spreading when it breaks out in a mass of buildings.

I had written thus far when I noticed in the *Builder* of the 13th ult. that you had been good enough to insert my communication respecting the construction of warehouses, and that other persons had suggested the plan of placing the stairs outside of a building instead of within it. I hope this mode of doing it will be impressed upon the attention of architects, as it will facilitate the fireproof construction of this description of building.

Mr. Hesketh, in paragraph No. 7, recommends that all well-holes through the various floors of a warehouse should be discontinued, but he does not appear to have any objection to staircases between walls *within* a building. I must, however, differ with him on this point, as my experience tells me that, *as approaches to the floors of a warehouse for business purposes*, they have no advantage whatever over those that might be placed outside. I know what it is to run up one pair of stairs and down another, and in to one floor and out to another, to inspect drugs in the warehouses at the London and other docks. I have no doubt that I travelled over more ground on such errands up stairs within a warehouse than I should have had to do if they had been placed outside the building. I have prepared a plan which accompanies this letter, that shows what I think will be considered an improvement upon the former one. It represents one floor, say the first, of a pile of warehouses, 93½ feet long by 75, from front to back, and the goods are supposed to be so stowed (as shown by the dotted lines), that one large window lights each gangway. The amount of light required in warehouses for merchandize is no more than will enable a man to see the marks and numbers upon a package in dull weather. If this rather important point be carefully considered, and in connection with it the stowage of goods, it might, perhaps, lead to a better arrangement of windows, and fewer of them than is sometimes adopted. My view is, that windows should be placed in accordance with such conditions: I have therefore shown them 6 feet wide within the reveals. The sill is supposed to be 2 feet above the floor, and the head as close under the joists of the floor above as circumstances will permit. The panes of glass should be large, in order that as much light as possible may be transmitted through them, and the jambs well splayed. There can be no objection to windows of large size where they are protected by outside shutters, however large they may be, and which can be opened and shut from a landing or gallery, as shown in my plan. The loophole doors might also be glazed, and the shutters or rather large doors, might be so constructed as to be completely fire-proof, and however heavy, very easily opened and shut.

In the thickness of the walls at the end of *each* of the three gangways, there would be air-flues, 15 inches by 9 inches, carried up so far above the roof as to produce a good draught. Suppose the warehouse to have cellars, and first, second, third, or more floors, and each to have a separate air or ventilating flue, placed side by side like a stack of chimneys. The aggregate sectional area of the *three* ventilating flues above mentioned would be nearly 3 square feet,—amply sufficient, I think, to ventilate a floor of the size shown upon the plan. The opening into each flue would be within a foot of the ceiling; and in the uptake there would be a

throttle valve so balanced as to require only a small cord to keep it open, which in case of fire would be immediately burnt, letting the heavier side fall, and so shut the valve. I borrowed this idea of the cord from an article, which recommended the doors between the floors to be suspended like the sashes of a window, instead of hung upon joints. The shutting of the throttle-valve would immediately check all inward draught from outside the building, through the loophole door and the two windows, which, if well constructed, would be nearly air-tight.

It will be seen that by this plan of having the stairs outside the building, with a gallery in front, the several floors would be as accessible as if the approach to them was within the building. The wrought-iron doors to the loopholes and shutters to the windows might be closed, as I have said before, by a person standing upon the gallery. A gallery projecting 3 feet beyond the front of the warehouse would facilitate the landing of goods at a loophole, especially when the packages are large, and it is required to get a truck underneath them. The jib of the cranes in such warehouse should stand farther out, so as to have the jib as short as circumstances will permit.

The form of a warehouse for merchandise will always be dependent upon that of the site, and also its particular requirements for the kind of goods to be stored up in it. I like Mr. Henman's idea (in the *Builder* of the 13th ult.), of having thoroughly fireproof buildings placed between stacks of other warehouses, constructed as he proposes. In such warehouses as these might be stowed silk, cochineal, and the like. No. 3 warehouse on the north side of the London Docks (one of those built, I believe, at the time the docks were constructed, and where each pile is separated by a wide roadway, leading to the warehouses in the rear), is one that I frequently had to visit; and I have been told that in this single pile there have been several hundred thousand pounds worth of goods. The first floor was principally silk and cochineal; and in one room I have seen many works of art, sculpture, painting, &c., imported from abroad, and lying there till cleared at the Custom House. Being a well-known visitor, I generally got a sight of them before they were delivered.

At the time the Earl of Liverpool was Premier, I sent him (not then knowing whom else to send it to) a letter, suggesting a plan for seasoning timber for the navy building yards. It was to sink a cast-iron cylinder, of large dimension, partly in the ground, and so as to leave the top of it a convenient height above the surface. Into this cylinder I proposed the timber should be placed, a cast-iron air-tight cover put on, and the air within exhausted. After a while the vacuum was to be filled with hot air, to dry the moisture which was supposed to cover the timber inside. My theory was, that, when the external pressure was removed from the surface of the wood, the sap and moisture would exude and be dried up. This process was to be repeated, if necessary. I never heard anything more of my letter; but, oddly enough, I saw, in a publication some months after, that some other person had made a similar discovery. For anything I know mine might not be the first: all, however, that I aimed at was, to direct the attention of Government to a matter which I believed to be deserving their consideration. A plan, very similar to this, has been adopted for the purpose of kyanizing railway sleepers, and timber for other purposes. My reason for alluding to this scheme for seasoning navy timber is to suggest, and perhaps others have done so before, the saturating the surface of the timber used in the construction of floors and roofs of warehouses with a liquor that would render them partially indestructible by fire for a few hours. It might perhaps be done by placing the wood in tanks, exhausting the air, letting in the liquid, and then compressing it into the pores of the wood. I believe this is somewhat after the manner of kyanizing timber. I am not prepared to say what the liquor should be; perhaps the silicate of potash, or what I believe is called water-glass. Both these substances—potash and sand—are indestructible by fire, but which, if intense enough, would of course convert them into glass.

H. Liddell.

Railway Tyres.—Mr. A. P. Stocker, of Wolverhampton, proposes to combine layers of steel, iron, or puddled steel, with layers of ordinary wrought iron, and to roll and weld them together, so as to combine increased durability and power to resist wear and tear with sufficient toughness to resist breakage.——Mr. J. Fenton, of Queen-street, Lincoln's-Inn, has also proposed an improvement connected with railway tyres.

THE METROPOLITAN ASSOCIATION OF MEDICAL OFFICERS OF HEALTH.

At the last meeting of the Metropolitan Association of Medical Officers of Health, Dr. Aldis in the chair,—

The following Report was read from the General Purposes Committee.

"The General Purposes Committee report that the Association has held three quarterly and six evening meetings during the year.

The evening meetings have been successful in eliciting interesting discussions on different sanitary topics.

The first evening was occupied by a discussion on Bakers, Bakehouses, and Bread, opened by Dr. Druitt.

The second and third meetings were engaged in discussing the Sanitary Condition of Public Schools, the subject being introduced by Mr. Chadwick, C.B.

A memorial was addressed to the Commissioners of National Education by resolution of this third meeting.

The fourth and fifth evenings were occupied by a discussion on the best means of Preventing the Entrance of Sewer Air into Houses, opened by Dr. Sanderson. At this meeting Mr. Lovegrove, surveyor, exhibited his apparatus and trap for drainage.

At the sixth meeting Mr. John Taylor, jun., explained the construction of his new patent smoke-consuming grates, and his patent walls for excluding damp; and Mr. Kinipple exhibited models of his patent system of self-acting perpetual drainage.

During the winter your committee investigated an outbreak of disease at West Ham, brought under their notice by Mr. Elliott and Dr. Ansel. A report was presented to one of the general meetings on the subject.

Representations have been made to the Home Secretary and other influential members of Parliament on the Metropolis Local Management Amendment Bill, with the view of getting clauses introduced to secure sufficient open space at the rear of newly-erected buildings, and to enable local Boards to compel owners of property to supply dwelling-houses with water in districts beyond the reach of the mains of any water company.

The committee have been in communication with the Registrar-General in reference to the Census, with the purpose of obtaining the statistics of the several districts of the medical officers of health. The Registrar-General has offered to allow any officer of health to extract from the books at the central office, as soon as he has done with them, such particulars as he may require for his own district. In the mean time he is willing to furnish to any member of the Association who may desire it the population and number of houses in each enumeration district, together with the plan on which the several registration districts were subdivided for the purposes of enumeration.

The question of establishing a museum of sanitary appliances has been under the consideration of your committee, as well as of endeavouring to secure space for an exhibition at the International Exhibition of 1862.—Signed on behalf of the committee, Thomas Hillier, Secretary.

July, 1861."

ARCHITECTURAL ASSOCIATION.

At a special business meeting, held on the 26th of July, in accordance with a requisition for the purpose of considering the report of the Committee of the Institute, on the subject of Architectural Examination, the following resolutions were passed:—

"That the Architectural Association expresses its general approval of the proposed regulations and curriculum as forwarded to it by the Honorary Secretaries of the Royal Institute of British Architects, but begs to submit that in the opinion of its members, the following modifications in detail would, if adopted, prove improvements."

"That the titles of ordinary proficiency and honourable distinction should be modified, and senior and junior examination be substituted."

"That to paragraph 4, on page 1, the following words be added:—'Or such other books of tables as the examiners upon his application shall allow.'"

"That except under extraordinary circumstances, the examiners shall be exclusively men belonging to the architectural profession."

"That 500 marks should be deducted from history and literature, and added to mathematics in the first examination."

"That on page 3 the words, 'whose president or secretary, at the time when such distinction was adjudged, shall have been a Fellow of the Institute,' be omitted."

"That the third paragraph on page 4, should be revised or omitted, as the practical result seems to be that the larger number of marks a candidate obtains for answers, the worse would be his position."

"That a method should be adopted for informing the unsuccessful candidates of the subjects in which they failed, and possibly it might be advantageous to tell them the number of marks they obtained."

"That the scale of fees should be reversed, one guinea being payable for the first, and two guineas for the second examination."

"That the declaration should be modified; that the fact of a candidate discontinuing his profession, or supplying materials with the knowledge of his client, should not occasion his removal from the lists of passed candidates."

"That the secretaries be requested to communicate these resolutions to the honorary secretaries of the Institute, and to the honorary secretary of the Examination Committee."

MANCHESTER ARCHITECTURAL ASSOCIATION.

The usual meeting of this association was held on the 24th ult. After some preliminary business Mr. John Rowland read a paper on "Stone." The paper was opened by a general review of stone as an important building element; and one, a thorough knowledge of which is indispensable to the architect. After noticing the peculiarities of the different kinds while in the rock, and confining his remarks in a great measure to the quarries of Yorkshire and Derbyshire, he referred to Fountains Abbey as an illustration of the unequal decay of stone obtained from the same quarry; showing that it is impossible to know with certainty that each stone raised to the edifice is perfect; but, having a knowledge of the most durable varieties, we must exercise our own judgment as to the qualities of the whole. He then, in continuation of the subject, arranged freestones under four heads, viz., sandstones, limestones, magnesian limestones, and oolitic stones; giving the names of the various quarries, colour, specific gravity, and other distinguishing characteristics; mentioning a number of buildings in which these stones were employed. Referring to decomposition and disintegration (the two causes of decay in stone), he remarked, "When we consider the state of the atmosphere in Manchester, we cannot wonder at the decay which often exhibits itself in our new warehouses, even before the workmen have left the building. The air of Manchester, which, in consequence of the large consumption of coal in the neighbourhood, always contains sulphuric and carbonic acids, must necessarily exercise a powerful and injurious influence. Upon examination of stone and brickwork in Manchester, sulphates of lime and magnesia are always found; which, after rain, are absorbed into the porous material; and, crystallising in dry weather, effect its destruction. If in our populous and smoky towns we are to preserve our buildings, we must have recourse to chemical means." Having alluded to the various processes which have hitherto been discovered for the attainment of this object, the writer concluded with a hope that "a process may soon be found which, being applied to the external face of stone buildings, may be so effectual that after the lapse of centuries they may yet testify to the improvements of the nineteenth century."

After a short discussion it was decided that the importance of the subject merited further investigation. Its consideration will therefore be resumed at the next meeting, in the place of the paper for the evening.

AUSTRALIAN NEWS.

The art-room at the public library in Melbourne has been formally opened to the public by his Excellency Sir Henry Barkly. In a long address Sir Redmond Barry stated that the primary idea entertained by the trustees, in recommending the formation of a museum of art in connection with the library, had reference to the establishment of a school of design. With this view casts of some of the best known works of antiquity had been procured. They arrived much mutilated by injuries received on the voyage; but the skill and patient labour of Mr. Summers (himself an accomplished sculptor), had wrought a complete restoration. They formed but a small part of what the collection would be: the remainder, which had not yet arrived, consisted of objects of equal interest. As to the library itself, it was stated that the number of volumes on the shelves was now 27,240, and at the end of the year the number would be 29,000. The readers within the library have increased with the enlargement of the building. As taken from the books in which the names are inscribed by the readers themselves, said Sir R. Barry, they appear as follows:—

1856	.....	23,769
1857	.....	42,226
1858	.....	77,955
1859	.....	127,887
1860	(eleven months)	162,115
1860	(three months).....	41,850

This, he added, exceeds the number of readers at the British Museum in the year 1857!

The Swanston-street drinking-fountain at Melbourne, though disowned by the city corporation, has found favour with others. The managers of the Melbourne hospital have applied for it, in order that it might be erected in the hospital reserve, and a meeting has been convened to procure its removal from its present site to the Carlton Gardens.

The foundation stone of a Sailors' Home has been laid in Sydney, by Lady Young. The Home will provide 160 sleeping-berths, and will cost 11,000*l*. The basement, which opens upon the quay, will be made use of for kitchen, bathing apartments, and store-rooms, and also for separate kitchen offices for the superintendent's residence. Immediately to the south of that will be the large entrance-hall, with offices on one side, and waiting-rooms on the other. At the rear of the superintendent's residence there will be a dormitory, 60 feet by 30 feet; and extending parallel with Circular Quay will be the dining-room, 42 feet by 30, and an additional dormitory 32 feet square. On the first-floor, facing George-street, there will be a museum, a library, and a school-room. On the other side of the building will be two galleries, around which (and also beneath them on the ground floor) will range rows of cabins—there being altogether 160 sleeping-berths, each being 7 feet by 4 feet. It is upon this portion of the building that a commencement has been made—a considerable portion of the basement stonework being done. The two galleries will, when finished, afford sleeping-rooms for sixty men. The building will be of brick, with stone dressings, with a high-pitched roof and two tiers of Norman windows, so distributed as to give nearly every one of the sleeping-berths a separate window.

ANCIENT AND MODERN STAINED GLASS.

May I be allowed to say a word or two on the subject of stained glass. First of all, one can hardly be expected to agree with the Rev. A. Poole, as reported in the *Builder* of July 20th, who tells us, among other things, that stained-glass windows are not made to be looked at; and, secondly, that the principal charms of the old ones consist, not in their colour or their brilliancy, but in the atmosphere, whatever that may be. However, the last remarks of the lecturer, upon the quality and texture of the modern glass, are for the most part very true, although not very new; for Mr. Winston has been writing and lecturing upon this part of the subject, to my certain knowledge, for the last ten years. If we look at a modern window, it generally appears to be all right as long as the spectator is just in front of it; but when the said window is put in its place, say at the end of a chancel, where you can obtain a good view, it loses all its transparency, and looks like a painted deal board. Now it appears to me that this unfortunate result is due to two great causes: one of these is the want of proper artistic study; and the other is the quality of the glass itself. When I mention the want of proper artistic study, I do not refer to bad drawing or composition, although, unfortunately, these latter defects are by no means uncommon, but to the want of a properly-coloured cartoon, by which some idea may be obtained as to the result when executed, and which would also serve as a guide to the workman, and prevent him from cutting all the pieces of one colour from the same sheet of glass, as he is only too apt to do.

But, after all, the great difficulty is with the glass itself. Mr. Poole asserts that the texture of the old metal is not bright like a transparent jewel, but more like that of an opal. I am afraid if the lecturer could see an ancient window in its original state, that he would sadly miss the opal texture, or at all events a great portion of it; for although a toning is often found at the back of old work, this could never have produced the effect such as we see at the present day, after, say, 400 or 500 years, and which must be mainly due to the decomposition of the exterior surface. The best ancient windows I have ever seen are at Florence and those in the mosque of the Sultan Suleyman, at Constantinople, and they both look like jewellery. The former, which are made of thick metal, such as we use in our own modern work, look as if composed of slices of gems; while the latter, on the contrary, where the glass is as thin as an eggshell, resemble a number of small jewels arranged on a pattern; so that mere thickness would appear to have but little to do with the effect. As far as I have been enabled to judge, it is very desirable to make the background of a highly-coloured window of a greyish, greenish blue, so that the brighter glass of the figures may tell out against it, and above all to vary the tints of the same colour; *i.e.*, if it is a question of a green garment, to make it up of as many tints of green as possible, and not to cut the whole affair out of the same piece of glass. Again, more variety may be got by a judicious use of toning, the which toning may be made of the powdered glass, burnt on with a flux; but by far the most valuable results are obtained where the colour varies in the same piece of glass, when, in fact, it is streaky: and this brings me to the second consideration, viz.—the texture of the modern glass.

I am very much inclined to believe that there is not very much difference in the mere texture of Messrs. Powell's glass and that of the old metal; for the former has been made from the receipts furnished by Mr. Winston, who has devoted a great deal of time and care to the analysis of the old glass. Unfortunately, Messrs. Powell will persist in blending the colour too much with the metal, and the consequence is that the sheets for the most part come out all of a tint, instead of being streaky and clouded. What little does happen to possess the latter qualities, the firm very naturally keep for their own work, and thus the stained glass manufacturer cannot obtain what he most wants; for Mr. Winston has hitherto limited the use of his receipts to Messrs. Powell alone. Now, as these latter gentlemen are unable to produce a sufficient quantity of the glass in the right manner, I would suggest whether the time has not arrived to make these said receipts common to all the glassmakers, so that we may have a better chance of obtaining what we want. I should probably not have ventured on this suggestion, had I not heard a report that these very receipts have been forwarded to the Munich manufactory; and as our own countrymen are already losing orders which are sent to Munich, it is hardly fair to leave them at the mercy of a single firm.

W. Burges.

ARCHITECTS AND THE ROYAL ENGINEERS.

Sir,—I was never more surprised than at the statement the other night, at the Institute, as to the position of the engineers. We were told that Captain Fowke, and any other of that body, can at any time turn their back upon the service and accept any job that may offer, they continuing to receive their half-pay all the time, and being at liberty to return to the service and their full pay whenever they please. And not only so, but I find they can get any assistance from the corps of Sappers and Miners for next to nothing; so that I am not only paying the men who take the bread out of my mouth, but finding them clerks and assistants besides. No wonder the engineers get all the good things, and affect to look down on us. Let me hope, sir, by the assistance of your powerful journal, this state of things may be put an end to, and justice be done to the

Tax-paying Architect.

PROPOSED THAMES EMBANKMENT.

The following is the report of the commissioners appointed to examine into plans for embanking the river Thames within the metropolis:—

To the Queen's most excellent Majesty.

We, the undersigned members of your Majesty's commission, appointed to examine into plans for embanking the river Thames within the metropolis, so as to "provide with the greatest efficiency and economy for the relief of the most crowded streets, by the establishment of a new and spacious thoroughfare, for the improvement of the navigation of the river, and which will afford an opportunity of making the low-level sewer without disturbing the Strand or Fleet-street, and also to report upon the cost and means of carrying the same into execution," now humbly submit to your Majesty the conclusions at which we have arrived, and the recommendations we have agreed to offer.

2. The nature of the inquiry entrusted to us was made known to the public by advertisement in the newspapers, and more than fifty designs were presented for our consideration. A short description of each is given in Appendix A., and the authors and other persons interested have had the opportunity of publicly explaining and illustrating their respective views upon the subject. The evidence given by the parties will be found in Appendix B.

3. The main features of the majority of the plans are an embanked roadway on the north side of the river, and the formation of docks with the view to retain all the existing wharfs; in others, railways in addition to the roadway and docks have been proposed; whilst in a few, a solid embankment and roadway without either docks or railways have been suggested. Amongst these latter is a plan submitted by Mr. Sheilds, some of whose suggestions appear to us to afford in a greater degree than any of the other designs the basis upon which an efficient and economical scheme may be founded. We desire, however, to express our high appreciation of the great engineering skill and ability that has been displayed in many of those designs which contemplated the construction of docks and railways.

4. The wharf property between Westminster Bridge and the Temple Gardens is for the most part devoted to the coal trade. We find that great facilities are now afforded for the distribution of coal by the new system of unshipping in the docks into railway waggons, and by various depôts on the railways in and near the metropolis. We are of opinion that public convenience no longer necessitates the continuance either of the coal or any other trade in this immediate locality. We, therefore, think that it would not be expedient to construct and maintain docks for the sake of preserving the existing wharfs between the points we have mentioned; whilst their removal will greatly simplify the formation of the embankment, and add to the beauty of the river. The wharf property, however, between the Temple Gardens and Blackfriars Bridge, cannot, in our opinion, be so treated; and that eastward of Blackfriars Bridge is so important in a commercial point of view, that we do not recommend any interference with it.

5. Having regard to these and other considerations, we are of opinion that we shall best fulfil your Majesty's instructions and provide for the requirements of the public, by establishing a spacious thoroughfare between Westminster Bridge and Blackfriars Bridge, by means of an embankment and roadway; and that the new thoroughfare thus created should be continued on eastward from Blackfriars Bridge by a new street, according to the line formerly laid down by Mr. Bunning, the City's architect, from the west end of Earl-street across Cannon-street, to the Mansion House. Without such a street no relief whatever would be given to the crowded thoroughfares of Ludgate-hill, St. Paul's churchyard, and Cheapside.

6. The line of embankment at Westminster would coincide with the terrace of the Houses of Parliament, and from thence to Blackfriars Bridge would nearly follow the line laid down for the Corporation of the City of London in 1841 by Mr. Walker, Captain Bullock, Mr. Saunders, and Mr. Leach. The general level of the embankment and road would be 4 feet above Trinity high water. The road would commence at Westminster by an easy descent opposite the Clock Tower, and be continued on, 100 feet in width, to the eastern boundary of the Temple Gardens: from this point the road would be reduced to 70 feet in width, and carried on a viaduct supported by piers of masonry, rising to the level of Blackfriars Bridge, so constructed as to leave a breadth of water for the convenience of the City gasworks and the adjoining wharfs of about 70 or 80 feet. The spaces between the piers under the ascending road would be left available for barges to lie, and afford easy access to the water between this structure and the wharfs.

7. From Westminster Bridge to the eastern boundary of the Temple Gardens the embankment—sustained by a river wall—would be solid in its whole breadth; which breadth opposite Richmond-terrace would be 220 feet from the existing river wall. At Hungerford it would be 320 feet from the existing wharf; at Somerset House about 120 feet; and at the Temple about 220 feet. The plan accompanying this report sets forth the entire scheme.

8. With respect to the appropriation of the reclaimed land, we would recommend that so much of it as shall be in front of the Crown property—which will be about 120 feet in width in its narrowest part—should be laid out in ornamental gardens for the accommodation of the occupiers of the houses, and the portion in front of the Temple Gardens, also about 120 feet wide, be placed at the disposal of the Society to be dealt with in a similar manner. The other portions of the reclaimed land may either be kept open for the health and recreation of the public, or be applied to building purposes.

9. We propose that communications should be made with the intended roadway from Whitehall, opposite the Horse Guards, and also from some of the streets in the Strand,—and that a new street should be formed passing through the

Fig. 1.

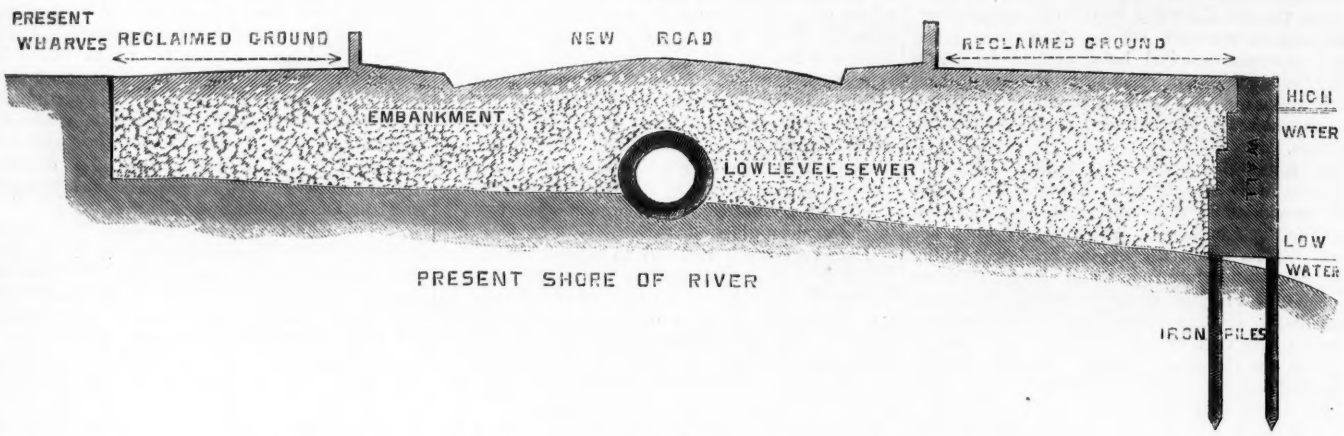
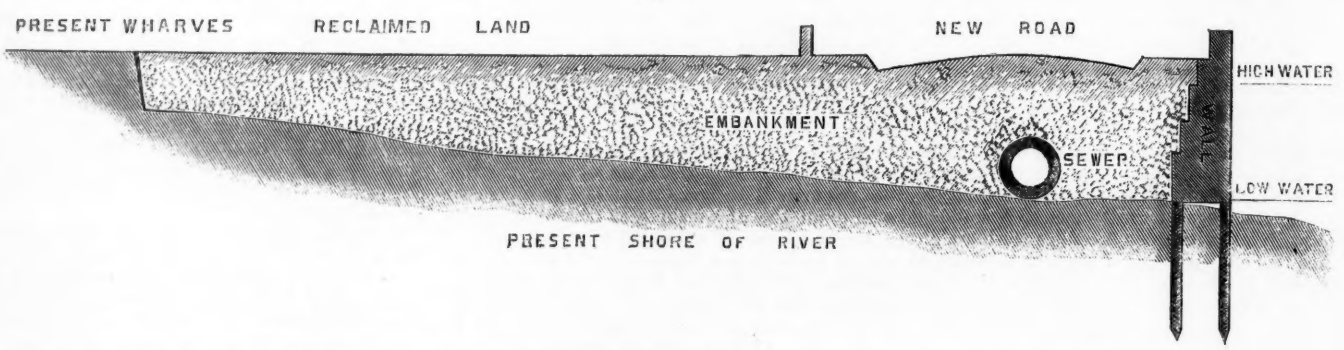


Fig. 2.



SKETCHES TO ILLUSTRATE MR. SHEILDS'S DESIGN FOR THE THAMES EMBANKMENT.

Savoy to Wellington-street. The frontages on these streets would offer eligible sites for building, as would also the inner frontage of the new road, if it should hereafter be thought fit so to utilize the ground. We, however, feel it our duty to recommend that while economy and utility in laying out and disposing of the ground should be kept in view, endeavours should be made to invest this new and conspicuous work with some elements of interest and beauty.

10. For the improvement of the navigation we recommend that the existing shoals between Waterloo and Westminster Bridges should be removed, due regard being had to the foundations of the former. Also that a uniform low-water channel of 6 feet in depth at ordinary spring tides, and 500 feet in width from the embankment wall, be secured, and thus the stream be more equalized in velocity. If at any future time any effect should be produced on the river from the diminution of its capacity for tidal water by reason of the embankment, arrangements may be made higher up the river by dredging, or by a tidal reservoir to compensate for the loss. The consideration, however, of this matter would naturally devolve on the conservators of the River Thames.

11. The embankment and street we have proposed will afford an opportunity of making the low-level sewer without disturbing the Strand or Fleet-street, and at the same time facilitate the construction of the sewer eastward of the embankment.

12. We are not prepared to recommend the construction of an embankment on the Surrey shore at present; but if hereafter it should be thought desirable or necessary to embank any portion of it, the scheme we have proposed for the Middlesex side will not in any way interfere with it.

13. With regard to that part of our instructions in which we are commanded by your Majesty to "report on the costs and means of carrying the same into execution," we beg to report that we estimate the cost of the land, making compensations, constructing the embankment and roadways, and also acquiring the property in the City for and forming the new street to the Mansion House, at 1,500,000*l.* This amount, however, would be reduced should it be thought right to dispose of any of the reclaimed land on the bank of the river for building purposes.

14. Parliament having appropriated the coal dues to provide for the outlay necessary for this great work, it only remains for us to express our opinion as to the "means of carrying the same into execution."

15. Looking at the magnitude of the work, the important and varied interests, both public and private, which will be affected—and the urgent necessity for its early completion,—we are of opinion, that the control and management of the undertaking should be entrusted to a special commission, appointed by your Majesty, in order to ensure the speedy and economical attainment of an object so much needed by the public, and affording so favourable an opportunity for the improvement of the river and adornment of the metropolis.

All which we humbly report to your Majesty.

Witness our hands and seals, this twenty-second day of July, 1861.

WILLIAM CUBITT.
JOSHUA JEBB.
DOUGLAS GALTON.
EDWARD BURSTAL.
HENRY A. HUNT.
JOHN ROBINSON M'CLEAN.

HENRY KINGSCOTE, Secretary.

THE THAMES EMBANKMENT DESIGN BY MR. F. W. SHEILDS, C.E.

THE Commissioners having specially pointed out the design by Mr. Sheilds as most nearly meeting their views for execution, our readers will probably be glad to have a further description of the scheme.

Mr. Sheilds proposes to construct a river wall, following nearly the line of low water, as a face to the embankment; and a solid embankment within it to the present shore; between the bridges of Westminster and Blackfriars.

The line of wall recommended by the Commission corresponds with this.

A road, 80 feet wide, is carried, on the level, along the centre of this space (fig. 1), passing under Hungerford and Waterloo bridges, and communicating with the existing streets. The embankment being much wider than the road, there is thus a breadth of reclaimed land left on both the river side and the inland side of the road; whereof the portions in front of their premises would be given up to the owners of the more valuable waterside properties, in order to furnish them a new water frontage in place of their present frontage, which would be separated from the river.

Thus the waterside properties, whether business premises or pleasure-grounds, would retain all their present advantages, with large additions to their space. The less important wharfs are proposed to be brought up altogether; as, with the reclaimed ground adjoining, they would form a most valuable property, with frontages both to the river and to the main road, which might be disposed of in dimunition of the cost.

It is also proposed, as an alternative, to carry the road as a public promenade by the river side, instead of in the centre of the embanked space (fig. 2).

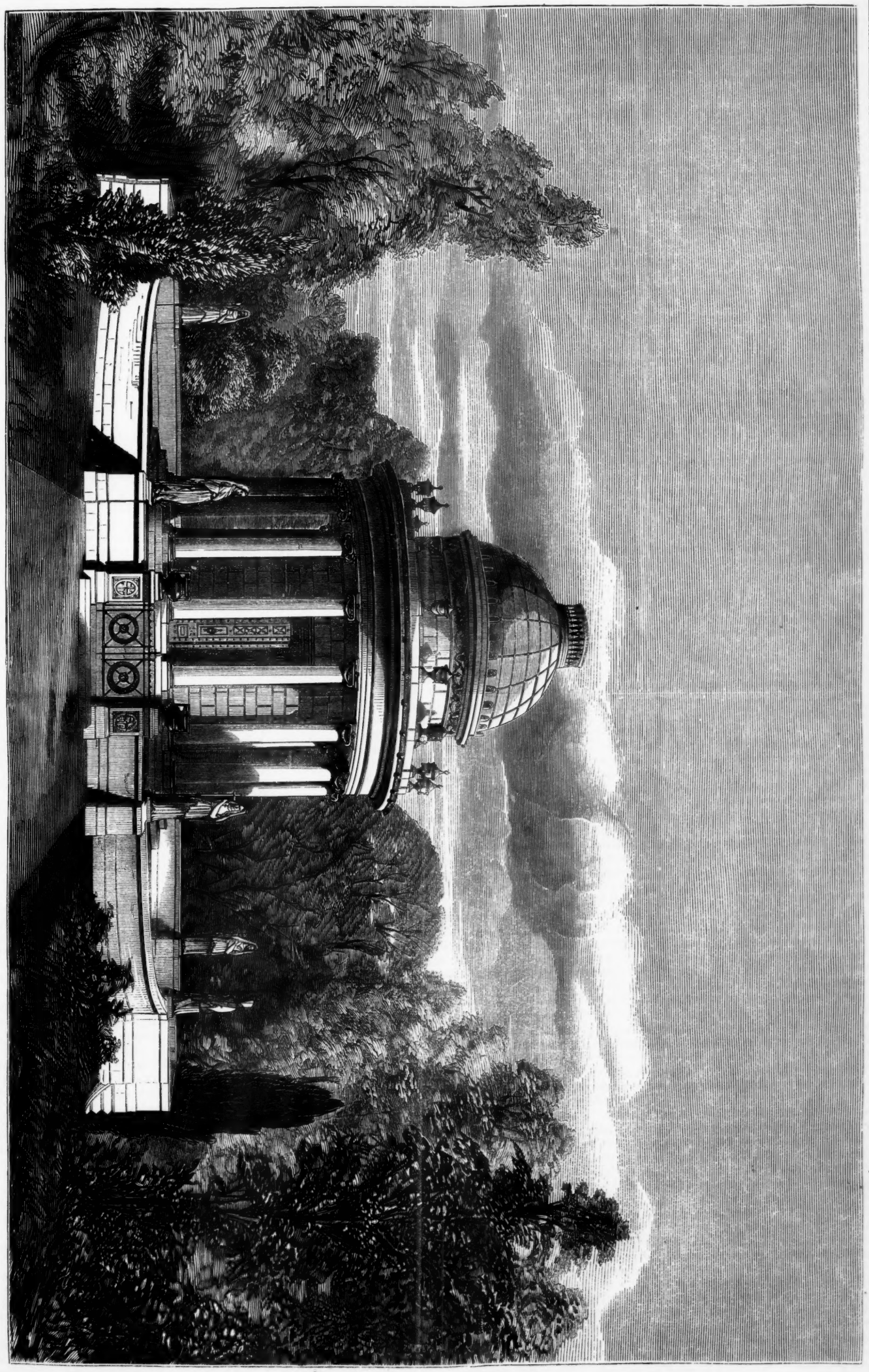
This design would be more costly, inasmuch as the reclaimed land, having frontage to one side only, and no frontage to the river, would be less valuable in its character, though the cost for works of construction would not be altered. The wharfs in this case would be bought up altogether; and, with the reclaimed land within the road, might either be laid out in ornamental grounds, or sold as building land, to defray part of the cost.

The design recommended by the Commission corresponds with the foregoing from Westminster Bridge to the Temple Gardens; but, for the short distance between the Temple and Blackfriars Bridge, they recommend the road to be raised and carried on arches, so as to give access for barges underneath the arches to the present wharfs, leaving also the space between the road and the present wharfs unfilled and in its present condition.

The advantages claimed for Mr. Sheilds's plan are, that it provides an additional great thoroughfare, a site for a main sewer, and the improvement of the condition of the river at a minimum of cost; avoiding the construction of docks and lock-gates, and of the series of arches necessary to carry the main road over them; thus reducing the work to the formation of a simple embankment.

The estimate for construction only, and without purchase of property, amounts to 250,000*l.*, and includes the entire completion of the face-wall, embankment, and sewer; the construction of an approach to Waterloo Bridge, the formation of all the new streets, and a sum of 20,000*l.* for contingencies.

The Chief Commissioner of Her Majesty's Works, Mr. Cowper, has announced his intention to confide to the Metropolitan Board of Works the duty of carrying out the recommendation of the Embankment Commissioners.



MAUSOLEUM OF THE DUCHESS OF KENT, AT FROGMORE, NEAR WINDSOR.—Mr. A. J. Humbert, Architect.

MAUSOLEUM OF THE LATE DUCHESS OF KENT AT FROGMORE, NEAR WINDSOR.

Before the publication of the present number of the *Builder* the remains of H.R.H. the Duchess of Kent will probably have been placed in the chamber beneath the Mausoleum which has been prepared at Frogmore and is represented by our engraving. The building was consecrated by the Bishop of Oxford on Monday last.

When King George III. was reigning, in the early part of the present century, an artificial mound of considerable size was formed from the excavations made in enlarging the lake, or ornamental water, in the grounds at Frogmore.

This mound, about 30 feet or 35 feet in height, is now almost covered with shrubs and trees of large growth; and, surrounded on three sides by the ornamental water, forms at once the most striking and the most pleasing feature in the grounds. It has always been a place of frequent and favourite resort, and was so particularly with the late duchess; and it is upon this spot that, in accordance with the wishes expressed by her Royal Highness, the Mausoleum has been erected.

The structure, which has been erected from the designs and under the superintendence of Mr. A. J. Humbert, architect, occupies the whole of the summit of the mound. It comprises an upper and a lower chamber; the former (represented in the engraving) being reached by a path leading to the top of the mound.

It consists of a cella with internal diameter of 12 feet, surrounded with sixteen Ionic columns, the shafts of which are of polished grey Cornish granite, in monoliths 10 feet 4 inches high. The capitals and bases are of bronze: the dome (surmounted with a stone balustrade) is covered with copper: the frieze below the dome is of polished red granite, with bronze festoons: the door and frame are of bronze; while the remainder of the building is of Portland stone.

The structure is surrounded with a stone parapet having three projecting balconies commanding charming views, in three directions, of the grounds and ornamental water.

The interior arrangement of this chamber is not yet finally decided upon. It is lighted from the top, and will have an internal dome,—probably of metal and painted glass; beneath which a statue of the duchess, by Mr. Theed, will be placed. The walls will be decorated and coloured.

The lower chamber, or sepulchral vault, is immediately beneath the upper chamber. It is constructed in white Suffolk brickwork, with a plain substantial semicircular brick dome. The entrance to it is by a doorway and vaulted passage in the side of the mound, not seen in the engraving.

Within this chamber the remains of her Royal Highness will rest in a sarcophagus of polished granite.

The sarcophagus is of blue granite, of very superior quality. The principal part is formed from a block of some six tons in weight, hollowed out to the requisite depth entirely by the chisel, with great labour, after the surface polishing had been finished. The top is a splendid slab, nearly four tons in weight, the upper surface bevelled from the edges upward. Under the body of the sarcophagus are four moulded supports resting on a sub-plinth. The length is about 8 feet, by 4 feet in width, and 5 feet in height. In style the sarcophagus is simple, with nothing in the way of ornament save plain mouldings. On one end there is a monogram of the letters Alpha and Omega, encircled by a serpent; and on the bevel of the top, on one side, an inscription in English setting forth her Royal Highness's age, titles, &c.; while on the other side there is an inscription in German. It was designed by Mr. Humbert, and executed at the works of Mr. Macdonald, of Aberdeen.

The work in the Mausoleum has been carried out with great care by Messrs. J. & C. I'Anson, the builders of the whole of the works above ground, as well as by the other parties who have been concerned in it, viz.—Messrs. Lawrence, of Waltham St. Lawrence, near Reading, who formed the foundations and sepulchral vault; Mr. Macdonald, of Aberdeen, who prepared, as already stated, the sarcophagus and granite frieze under the dome; Messrs. Freeman, of Penryn, who prepared the sixteen granite columns; and Messrs. Robinson & Cottam, London, the bronze and copper work. Messrs. Hart and Mr. Boulting, of London, executed the iron work; and Mr. Morris, as clerk of the works, had the charge of the whole throughout.

PROPOSED NEW BRIDGE AT BLACKFRIARS.

The committee of the Corporation for the Bridge House Lands have had under their consideration for some time the best mode of providing for the public convenience, which has been somewhat jeopardised by the state of the present bridge. After much deliberation they determined to call upon engineers for designs for a new bridge, leaving them quite unfettered in their arrangements and designs. The productions of these gentlemen, and of some rising engineers who were desirous of bringing forward their ideas voluntarily, have been under the consideration of the committee. The designs submitted to them are twelve in number, many of them elaborately drawn, with details of construction. The engineers were Mr. Barlow, Mr. Brereton, Mr. Goodchild, Mr. Brunlees, Mr. Joseph Cubitt, Messrs. E. Bidder & E. Clarke, Mr. R. W. Mylne, Mr. Fowler, Mr. Hawkshaw, Mr. G. Rennie, Sir John Rennie, and Mr. Page. From these the committee have selected the design of Mr. Page, and appointed him the engineer for its construction.

THE COVENTRY RIBBON WEAVERS.

In the time of the greatest disasters of these workmen we ventured to predict that, if the masters and the workpeople united vigorously and with intelligence to improve the changed conditions which were caused by the alteration of the French tariff, successful results would be the consequence. At the same time we expressed a strong opinion that the stagnation was in a measure caused by the unfavourable nature of the weather, and by the peculiarities of the fashion.

It is most satisfactory to find that the accounts from Coventry state that trade is improving, and that there is a prospect of future prosperity greater than has yet been enjoyed. It is reported that there are looms now in this ancient city on which can be woven almost anything that can be woven on any loom in any country; and other branches of manufacture are springing up. We feel convinced that it is only necessary to improve the skill of the designers, to employ the best chemical advice as to the improvement of colours, and use on a sufficient scale and in the best manner the power of steam machinery,—avoiding strikes, except in case of oppression,—to secure for the Coventry ribbons a profitable market, not only throughout our own country, but also among many other nations of Europe and elsewhere.

SMEATONIAN SOCIETY OF CIVIL ENGINEERS.

This Society, on Wednesday evening, the 31st instant, gave a special dinner at the Freemasons' Hall to their respected treasurer, Mr. Mylne, on the occasion of his fiftieth year of membership of the Society. About thirty gentlemen, including visitors, sat down to a sumptuous repast, and Mr. Wm. Gravatt, the president of the year, took the chair.

After dinner the standard toasts of the Society were given. The health of Mr. Mylne was proposed by Sir John Rennie, who first touched upon the history of the Society; saying it was founded in 1771, by Mr. Smeaton, for the purpose of encouraging civil engineers, and introducing, through social meetings, a friendly intercourse among men of science and the profession at large. Among the early members of the Society were the names of Watt, Jessop, Whitworth, Brindley, Rennie, Mylne, Huddart, and Chapman; and later those of Banks, Priestley, Evelyn, Boulton, Hutton, &c. A graceful notice of the merits and urbanity of disposition of the worthy treasurer was made, and great praise was given for his constant exertions towards maintaining the high position of the Society. Mr. Mylne, in reply, said it was one of the highest gratifications to see his professional brethren joining in so marked a compliment; that the Society had ever been one of great interest to him; and he had always endeavoured to maintain its character, and draw together opposing parties. After a long life, he was now proud to find such warm feelings of regard and respect.

Mr. Fairbairn proposed "The Visitors" in a brief speech, which was replied to by Mr. Robert Chambers. After alluding to the peculiar gratification that he felt in being favoured with the opportunity of paying a tribute of regard to his friend, he could not refrain, he said, from alluding to the long line of engineers and architects that the Scottish race of Mylne had produced. He could speak with certainty to nine consecutive generations, with every reason to believe there were three previous to them; and he was sure it must be a source of deep gratification to Mr. Mylne to see that the hereditary profession was still continued by his son, the Vice-President of the evening. He thanked them all in the name of the visitors.

The party broke up at a late hour.

SEATS FOR THE WARWICK VOLUNTEER REVIEW.

In order to provide accommodation for the public on the occasion of the late review of the Volunteers at Warwick, it was decided that raised platforms, extending on each side of the race stand, should be erected. Advertisements were, therefore, inserted in the local newspapers, soliciting tenders from builders for their construction. The committee received four tenders from the following parties:—Messrs. Eassie, Gloucester, at 2s. 9d. per seat; Mr. Mault, Coventry, at 1s. 9d.; Mr. J. H. Clark, Warwick, at 1s. 5½d.; and Mr. Ballard, Leamington, at 1s. 4⅜d. The last tender being the lowest, it was accepted, and the erection of the seats was entrusted to Mr. Ballard, who commenced his work on the 1st of July, and completed the erection of 11,000 seats on the 20th ult. The timber was brought to Warwick by railway and canal, and was supplied by Messrs. Price & Co., Nicks & Co., and Barkworth, Spalding, & Co., of Gloucester. The cost of the timber required for the seats exceeded 2,500*l*. It was afterwards sold by auction.

The committee placed the construction and arrangement of these galleries in the hands of Mr. G. T. Robinson, architect.

The supply exceeded the demand; but with that we have nothing to do. The review passed off admirably. The South Middlesex, as usual, showed their readiness and pluck, and travelled down to Warwick in force, making a day of twenty hours.

IRISH BUILDING NEWS.

In the recent arbitration case, Fulton *v.* The Ulster Banking Company," the state of the verdict was as follows:—

The plaintiffs proceeded in their summons and plaint for ..	£4,068	4	10
Further sum claimed at the arbitration for omissions	141	7	8
Total claim	£4,209	12	6
Amount of award	£2,287	1	7

A new waiting-room is to be erected in connection with the Dublin and Kingstown Railway Terminus, Westland-row, to meet the demands of the increased passenger traffic of the above line. The architect is Mr. Wilkinson; contractors are Messrs. W. H. Beardwood & Son; amount of contract is about 600*l*.

A new church is in course of erection at Bray, co. Wicklow. The plan is a rectangle, consisting of nave, 123 feet by 32 feet 9 inches; north and south aisles, each 14 feet 10 inches wide; chancel, 29 feet deep by width of nave; and vestry at the south-west angle, 14 feet by 9 feet 9 inches. A tower 28 feet square, to be left unfinished for the present, stands at the north-west angle. The nave is divided from the side aisles by arcades of 6 arches each, and is lighted by a clerestory of twelve two-light windows. The height of nave to ridge from floor line is 66 feet. The roof is open-timbered, and will be stained and varnished. The material employed in the building is the granite of the locality. The style is Early English. Mr. William Slater, architect; Mr. Thomas Henry Carroll, contractor. The amount of contract (exclusive of the tower and spire), is, we understand, about 7,000*l*.

A new spire is in course of erection on the present tower of Blanchardstown (R.C.) Church. The framing of the spire is of Memel, and will be covered with scalloped slates of blue and green shades; also with alternate courses of black and red tiles. The spire, which is to be 73 feet high, will form a very prominent object, as seen from the railway, and will add to the picturesque beauty of the scenery of this district. Mr. Charles Geoghegan is the architect; Messrs. W. H. Beardwood & Son are contractors; amount of contract is about 300*l*.

We understand that the tower of the (R.C.) Church of St. Laurence O'Toole, North Strand, is about to be raised 34 feet, and a spire of 60 feet in height erected on same. The tower is 14 feet square in the clear, and 20 feet square from out to out, with angle buttresses. Each face of the tower is to have a three-light louvred window, with canopy mouldings. The spire is to be of stone 12 inches thick at the base and diminished to 9 inches at the top, with two stages of windows

and broached weatherings where it meets the tower. The total height from the ground line to the summit of spire will be about 170 feet. Mr. John Bourke is the architect.

A new bank is about to be erected at Athy, county Carlow, for the National Banking Company, from the designs of Mr. W. F. Caldbeck, architect.

SCOTLAND.

Edinburgh.—The twenty-seventh annual general meeting of the Royal Association for the Promotion of the Fine Arts in Scotland has just been held in Queen-street Hall, Edinburgh. The walls behind the platform were hung with the prizes. There was a large attendance. Sir John M'Neill was in the chair. The report stated that the amount of the fund subscribed during the year was 5,185*l.* The Committee of Management have purchased, at a cost of 2,024*l.*, fifty-five works of art, consisting of five pictures, commissioned from Messrs. George Harvey, Horatio Macculloch, James Archer, Erskine Nicol, and Alexander H. Burr, in illustration of five songs of Robert Burns; and forty-seven paintings, seven water-colour drawings, and one marble bust, selected from the recent exhibition of the Royal Scottish Academy.——Workmen have commenced to erect on the High-street, a little to the east of St. Giles's, and opposite to the opening in Parliament-square, a rough wooden outline or model of the cross which was taken down in 1756, and which it is now proposed to restore.

Paisley.—At a meeting of the subscribers to the fund for the restoration of Paisley Abbey, a proposal to take away the east and side galleries, remove the pulpit to the east end, and reseat the church at the cost of the subscribers, has been approved of, and it has been resolved to raise, by subscriptions, an additional sum of 400*l.* required by this alteration.

Kirriemuir.—As a sign of the briskness of the mason trade in this quarter, it is stated that, although an advertisement appeared in the newspapers calling for estimates for the various departments of mason, joiner, slater, and plaster work required in the erection of a manse at Glenprosen, by the day appointed for settling the same there was not a single offer for the mason-work. Of course, the services of the other tradesmen were not required.

Elgin.—The south side of the city, this summer, says the local *Courant*, has presented a busy scene of house-building and road-making, which, if it continue, will soon rear a town where, a few years ago, there was nothing but corn-fields. South Guildry-street will soon be all built, but there will not be two houses in it alike: every one following his own fancy what part of his feu he will build upon, and whether his house shall face the east, west, south, or north, or any other point of the compass. Batchen-lane has now been converted into a street, thus making a thoroughfare from the High-street direct to Guildry-street, and thence to the railway station. The South Free Church stands in the very middle of South Guildry-street, in what is now seen to be a wrong place; but when it was built no street was expected to run from the back of it to a railway station. Some think there was more necessity for widening Lossie Wynd than for opening up Batchen-lane.

Aberdeen.—The following intimation, says last week's *Aberdeen Herald*, was copied from a board at the entrance toa quarry, near Buxburn station:—

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PROVINCIAL NEWS.

Lincoln.—A new mechanics' institute is to be erected here. The building is to consist of a suite of rooms, and adequate accommodation for all the purposes of a literary and scientific institution. The library will be 30 feet by 36 feet, and 20 feet high; the reading-room 24 feet by 20 feet high; the committee-room 24 feet by 19 feet, and a class-room 36 feet by 18 feet. The museum and lecture-hall will be 75 feet by 37 feet, and four rooms will be provided for the librarian within a space 36 by 18. There will be an ante-room 36 by 20, and a school-room 40 feet by 25 feet. The cost is not to exceed 2,000*l.*

Reading.—West-street Hall is nearly completed. It is a plain building, according to the local *Mercury*, but very well adapted to the especial purpose for which it is principally intended, a Working Men's Hall. It is entered by a passage from West-street, 9 feet wide. The body of the hall measures 54 feet by 35½, and will seat 400. At the west end there is a semicircular platform with a domed roof, which will form a reverberator of the speaker's voice. On one side of the platform is a retiring-room. The hall is lighted by lantern lights and sky-lights. The roof is open and constructed with iron tie-rods. Leading from the passage there is a committee-room, and a boiler-room is fitted up for *soirées*. The cost of the hall is 750*l.* Mr. Woodman gave his services as architect gratuitously. The funds have been raised by public subscription, and the hall is in connection with the Temperance Society.

Roath (*Cardiff*).—The following are the tenders for the erection of a cattle-market at Splotlands:—

Mr. Lane £1,066 3 6
Tenpence per cube yard extra for supplying gravel.
Mr. Watkins £955 10 0
Sixpence per cube yard extra for supplying gravel.
Mr. Jones £947 0 0
85*l.* extra for supplying gravel.
Messrs. Griffiths & Thomas.... £895 0 0
Fourpence per cube yard extra for supplying gravel.
Mr. Waller..... £870 0 0
Twopence per cube yard extra for supplying gravel.
Mr. Price £850 0 0
Sixpence per cube yard extra for supplying gravel.

A schedule of prices accompanied each tender. Mr. Waller's tender has been accepted. Tenders for a loan of 1,000*l.* are now to be advertised for.

Liverpool.—The foundation-stone of the new lying-in-hospital, in Myrtle-street, has been laid by the mayoress. The building, as described by the *Journal*, is Elizabethan in character. It will be faced with Yorkshire stone and Stourton stone dressings. The basement contains the kitchens, servants' hall, washing-rooms, laundry, and drying closets. On the ground floor there will be a board-room, apartments for the matron, waiting-rooms, rooms for the reception of the patients, &c. The first and second floors are to be appropriated as wards for patients and nurses, kitchens and bedrooms, bathrooms, &c. A separate building at the back of the premises provides accommodation for the dispensary, with separate yard and entrances. The building is planned to admit of extension. The architect is Mr. J. D. Jee, of Liverpool, and the work will be executed under the direction of Messrs. Nicholson and Ayre, contractors. The other contractors are, Mr. W. Thornton, mason; Mr. W. Tomkinson, bricklayer; Mr. J. Sharpe, plumber; Mr. J. Wallworth, painter.

Manchester.—The foundation stone of new offices for the guardians and poor-law officers of Prestwich Union has been laid. The new building adjoins the town-hall of Cheetham, in York-street, and will fill the vacant space between that building and the Assembly Rooms. The style will be Italian. The plan shows a central building with two wings, and in the centre of each wing a bay of polished Ashley, carved with ornamental balustrading at the top. The frontage to York-street extends to 43 feet. The cost of the building will be about 1,700*l.*, which amount the guardians are about to borrow, to be repaid by instalments.

Sheffield.—The contract for the Crimean monument has been signed by Messrs. Lane & Lewis, contractors. The design is by Mr. George Goldie, of Westminster, architect. From a basement of Darley Dale stone will rise a column of polished Aberdeen granite. The column will have a capital, and will be surmounted by a figure of Victory, holding in one hand the sheathed sword, and in the other a wreath of laurel. The height of the monument will be near 60 feet, and its cost, 400*l.*

Rutherglen (*near Glasgow*).—The foundation stone of the new town-hall for Rutherglen has been laid. The cost will be nearly 5,000*l.* The building has a frontage of 56 feet towards Main-street, and is situate between Main-street and King-street. It is to consist of two flats; the street flat containing shops and a lower court-hall, 34 feet by 40 feet. The upper flat is to be occupied by the large hall, the dimensions of which are 40 feet by 75 feet. The interior of the roof will be of a semi-circular form, and the lighting of the hall from the street will be by means of an oriel window. At the south-east angle is the entrance hall, and there is also to be a tower 110 feet high and 19 feet square.

SCHOOL-BUILDING NEWS.

Moulsham.—The new National Schools, recently erected, at a cost of 1,500*l.*, for the district of St. John's, Moulsham, have been opened. The new rooms are immediately contiguous to the church, with a slight elevation towards Moulsham-street. The architect was Mr. F. Chancellor, and the builder, Mr. J. Brown, of Braintree. The schools include a boys' room, 39 feet 6 inches long by 18 feet wide; a girls' room, 33 feet 6 inches long by 18 feet wide; and an infant's room, 34 feet long by 17 feet wide; each room being 12 feet high to the plate. The entrance to the boys' room is by a porch, with hat-room attached on the south side; that to the girls' room, which has also a porch and bonnet-room, being on the north side. The interiors of the school-rooms are faced throughout with white brick, with bands and patterns in red brick. The roofs are open-timbered and boarded; and in the centre of the boys' room rises a bell-turret, which also serves for ventilation. The boys' room is the principal elevation towards the street;—two three-light Pointed windows, with double gable over, and the bell-turret rising between, forming the chief feature. The exterior is faced with yellow bricks, with bands and ornamental patterns in red and black bricks, and the roofs are slated with blue and red Bangor slates in alternate bands.

Ashby-de-la-Zouch.—The foundation-stone of the new National Schools at Swannington have been laid by Lady Beaumont. The schools, which are intended to accommodate 108 children, are in the Early English style of architecture, and are being built in brick and stone, at an estimated cost of 700*l.* The buildings will also be used as a place of worship on Sundays. Mr. T. W. H. Miller, of Loughborough, is the architect. The design is to include a teacher's house, girls' yard, and boys' yard; with master's and teachers' gardens.

Sheffield.—The first stone of the Park Wesleyan Reform Schools has been laid by Mr. Roebuck. The projected schools, which are near the top of Duke-street, on the east side, are estimated to cost about 1,000*l.*, and will afford accommodation for 800 children, the entire building being about 76 feet by 33 feet. About 300*l.* have already been raised towards the object, leaving 700*l.* still to be subscribed. Mr. James Wing is the contractor for the building. There appears to be no architect.

CHURCH-BUILDING NEWS.

Leadenham.—The church here, which is dedicated to St. Swithin, and is in the Early Decorated style, has recently undergone considerable alteration and improvement. Mr. J. H. Hakewell, one of the architects to the Church-building Commissioners, had the superintendence of the work. Messrs. Kirk & Parry, of Sleaford, and Mr. W. Huddleston, of Lincoln, were invited to send tenders, and the latter was selected to do the work. The building is now heated with hot water; the apparatus, which has been placed at the south-east corner of the aisle, having been supplied by Mr. Hird, of Chelsea. The whole of the floors of the passages have been taken up, faced, relaid, and made good by stone of a similar description, viz., hard Ancaster. The internal walls have had a large coating of colour-wash taken off, and have been repainted, the lower part being cut away and replaced with new Ancaster ashlar. The colour-wash and paint on the piers and arches of the tower, the south and north aisles, and the chancel have been removed, and the whole restored to the original state, as also the internal parts of the windows and doors. A new window has been placed in the north-west end of the north aisle, the gift of Mr. Brown, of Leadenham. The benches are all open: the backs next the passages are carved and traceried; a portion of the ends being of carved poppy-heads. A new roof has been placed on the north porch, and other improvements have been effected.

Stutton (*near Ipswich*).—The foundation stone of a new Wesleyan chapel has been laid at Stutton. It will be erected in red and white bricks, and is Gothic in design. Its internal dimensions are 40 feet by 24 feet. It will afford accommodation for 250 hearers, and such arrangements have been made in the design as will at any future time admit the introduction of galleries. The architect is Mr. F. Barnes, of Ipswich. The builder is Mr. Bunnett, of Stutton.

Lavenham. — The restorations of Lavenham Church have been going on during the past year. The first work to be done was the securing of the nave roof, which was found to be in precisely the same situation as that of St. Mary's, Bury, when Mr. Cottingham examined it—namely, the feet of the principal spars all rotted away—so that the roof was resting, not upon the walls, but upon the carved figures and corbels. And the remedy was effected in the same manner—by every timber being shod with iron, all the unsound parts being, of course, removed. This, and the renewal of the lead, which was also necessary, involved an expenditure of 500*l.*, an amount far beyond what was anticipated. The pillars and arches, and the carved stonework of the clerestory have been

freed from accumulated whitewash, and the imperfections in the Tudor flowers which surmount this feature of the church have been made good. New mullions, and mouldings, where necessary, have been placed in the clerestory and north aisle windows. The ugly organ gallery, which hid the lofty arch into the tower and the west window (restored a few years ago), has been removed. The roof of the chancel has been replaced in its original form, instead of the incongruous later introduction; and the Decorated east window has been improved. About 6 feet of its lower part had been blocked up with masonry by the "vestibule" (now used as a vestry) erected at the end of the sixteenth century, by the elder Spring. By cutting through a great timber which crossed the window, and supporting the ends with uprights, a well, or dip, has been made in the roof of the vestry, so as to admit the light to the full depth of the window.

Brentwood.—A new Roman Catholic chapel has been erected and opened at Brentwood. The new building, which was designed by Mr. Gilbert Blount, of London, and has been erected by Messrs. Patman & Fotheringham, is in the Gothic style. It consists of a nave and chancel and two aisles, the latter being divided by arches. The length is 91 feet, the breadth about 40; the height to the open roof of the nave, 43 feet. It will seat about 600 persons. The exterior of the church is of Kentish rag-stone, with Bath-stone dressings; and it has a tower with a bell, and a spire, which, with the cross that surmounts it, rises to the height of 110 feet. The total cost was 2,500*l.*, which has been very nearly raised. Lord Petre gave the site and a subscription to the work.

Cranbrook.—A new reredos has just been completed for Cranbrook Church, at the expense of Mr. Robert Tooth, of Swift's Park, and is understood to be a portion of a memorial to his son. The screen of wood which stood at the east end of the chancel, and blocked up three or four feet of the bottom of the great east window, has been entirely removed, thereby opening the window to its original dimensions, and in its place one of Caen stone has been substituted. The style of architecture chosen has been the Perpendicular, in harmony with the oldest portion of the church. The drawings were furnished by Mr. Edward Hussey. The execution of the work was entrusted to Mr. F. Marshall, by whom it has been completed. Mr. Tooth is now engaged in the restoration of the great east window, which is eventually to be filled with stained glass. This will complete the memorial.

Brighton.—A new Catholic church has been raised by subscription on the south side of Upper North-street, near Hampton-place, and has been partly opened for divine service. The church is "dedicated to God, under the invocation of St. Mary Magdalen." In style the edifice is Gothic. It will comprise a nave with two aisles; a chancel, flanked on one side by a Lady Chapel, and on the other by a chapel dedicated to St. Joseph; a sacristy, confessional, &c. It is to be surmounted by a spire, crowned with a decorative metal cross. The following are some of the principal dimensions:—Total length (from east to west), 100 feet; total width (north to south), 64 feet; total height of tower and spire, 144 feet; height of nave (to point of roof), 45 feet; of side aisles, 22 feet; chancel, 39 feet; of side chapels, 20 feet; width of nave and chancel (exclusive of piers), 17 feet; width of side chapels and aisles, 9 feet 4 inches. When complete the church will contain between 700 and 800 sittings, and the total cost will be about 5,000*l.* Mr. Gilbert Blount, of London, is the architect, and the building contract has been taken by Messrs. Cheesman & Freeman, of Brighton; Mr. William Gildea superintending as clerk of the works. The chancel and side chapels were opened on the feast of St. Mary Magdalen.

Freemantle (*Southampton*).—The foundation-stone of a new church for the large district of Freemantle has been laid by the Ven. Archdeacon Jacob, of Winchester, on a spot of land adjoining the Church of England Sunday Schools. The design of the proposed building exhibits a cruciform plan, with chancel and nave, each with side aisle, north and south transepts, western tower and spire, and south porch. The extreme dimensions of the interior are about 130 feet by 80 feet, the chancel being 34 feet by 23 feet. The nave, 27 feet broad, consists of three bays of pointed arches, upon brick pillars, and stone capitals, to be eventually carved. There is a fully developed clerestory, with traceried window, of four lights. The glass is to be in large panes of rough plate, stencilled in simple ornamental patterns. The whole is to be cased with Swanage stone, and lined with red and buff bricks. The roofs are to be covered with slate. The gable copings and crosses, and the window tracery (of geometrical middle-pointed character), are to be of Bath stone. There are to be no galleries, and the accommodation provided is for 976, including children. The total cost is to be 4,000*l.* A local builder, Mr. A. Watts, of Freemantle, has undertaken the contract, and the architect is Mr. William White, of London.

Dumfries.—An ugly barn-like structure, the Buccleuch-street United Presbyterian Church, is about to be replaced by a building in the Early Gothic style. Plans of the new church, prepared by Mr. Alex. Crombie, architect, have been adopted. The gable will front to Buccleuch-street, from which will be the principal entrance, the stairs to the galleries being on each side. Above the main door there is a large arched window, and a window on each side of the door to light the staircases. The height of the gable will be nearly 60 feet. The church will be 65 feet in length, by 46 feet in breadth. The walls are to be of red freestone in courses, hammer-dressed: the front, buttresses, and other hewn work, will be tooled, not polished. The pillars which extend from the galleries to the roof will be connected by arches, four on each side. These arches will be so constructed as to give a borrowed light from skylights in the roof, and which will be a new feature in Dumfries churches. The roof will be an open one, painted in imitation of oak. Beneath the church there will be a school-room, 47 feet by 26 feet; the height to the ceiling being 11 feet. The cost of the whole will be from 1,400*l.* to 1,500*l.*, exclusive of the value of old materials. The church will accommodate 650 persons.

STAINED GLASS.

St. Andrew's Church, Watford.—A new stained glass window has been put up in this church by Messrs. Heaton & Butler, of London. The three principal lights contain the subject of our Saviour in the Temple, more especially illustrating the passage,—"Lo! Thy mother and I have sought Thee, sorrowing." The first space contains the figures of Mary and Joseph, the second our Saviour at the age of twelve, and in the last one the figures of the doctors, priests, and scribes. There is some novelty in the colours, especially the background, being composed of numerous small pieces of glass glazed together. In the dress of the Virgin many tints of blue glass are used, varying from light to dark. The costumes of the doctors and the high priest have, perhaps, nothing that calls for notice except the fringes on the garments and the phylacteries or frontlets on the foreheads of the latter. Dr. Cox, in his "Biblical Antiquities," states that "the wearing of phylacteries or frontlets was a Jewish custom, probably of comparatively recent origin, founded on a literal interpretation of the passage where God commands them to have the law as a sign on their foreheads and frontlets between their eyes. One kind of phylacteries was called a frontlet, and was composed of four pieces of parchment. On the first was written Exodus xiii. 2, 10; on the second, Exodus xiii. 11, 21; on the third, Deut. vi. 4, 9; on the fourth Deut. xi. 18, 21. These parchments were inclosed in a piece of tough skin forming a square, on one side of which was the Hebrew letter ש (shin), and bound round the forehead with a thong or ribbon when they went to the synagogue. Other authorities state that the phylactery was attached to the head with a purple thong tied behind in a knot, forming the letter daleth. The ends of the thongs were brought over the shoulder and fell on the breast. The dress of the high priest, one of whom is introduced among the doctors, was extremely rich: it consisted of an ephod, a short-sleeved garment, reaching to the hips, and richly embroidered. Over this was the pectoral or breast-plate, consisting of twelve precious stones, on which were engraved the names of the twelve tribes of Israel: this was fastened to the shoulders with a gold chain; and at the points of attachment was on each shoulder a precious stone, also engraved with the names of the tribes, six on each side. Underneath the ephod was the mihil, a long blue robe, reaching nearly to the feet: this had a border of golden bells and pomegranates,—seventy-two of each; and underneath this was the albe, a richly draperied white robe." In the tracery of the window is a "majesty," or figure of our Lord, seated in glory, surrounded by the twelve apostles. The figure of Christ is here placed in a circle instead of a vesica, which latter is the most general treatment. Round the margin of the circle are the words, "I am the resurrection and the life; whoso believeth in me shall never die." The figures of the Virgin and St. John the Baptist are in the other openings.

Lincoln Cathedral.—Two painted glass windows have been placed in Lincoln Cathedral,—one to the memory of Mr. Charles Chaplin, and the other to the memory of Mr. T. M. Keyworth. That to the memory of Mr. Chaplin contains four subjects, viz.,—"Our Lord's Appearance in the Garden," "The Walk to Emmaus," "The Incredulity of St. Thomas," and "Our Lord at the Sea of Tiberius." That to the memory of Mr. Keyworth is designed to form a companion to one previously erected by Messrs. Ward and Hughes to the memory of Mr. Apthorpe, and contains "The Nativity," "Christ in the Temple," "The Baptism," and "The Entry into Jerusalem." Mr. Chaplin's is put up by subscription; Mr. Keyworth's by his widow.

Boroughbridge Church.—A stained glass window has been introduced into the west end of Boroughbridge Church. The work is by Mr. Hughes, of London. It consists of three lights, with ornamental tracery above the figures. St. James is in the centre, to whom the church is dedicated; St. Paul on the left; and St. Peter on the right. The object of this window is a mark of respect and esteem to the Rev. R. D. Owen, incumbent.

METROPOLITAN BOARD OF WORKS.

At the last weekly meeting the embankment of the Thames formed the subject of a resolution by Mr. Le Breton, to the effect that,—"The bill for continuing the coal and wine duties having received the royal assent, it becomes the duty of this board, without delay, to take all necessary measures for carrying out the Thames embankment in connection with the low-level sewer north of the Thames; and that the officers be instructed to prepare the requisite plans and notices for obtaining legislative powers." Mr. Savage seconded the motion. Mr. Deputy Harrison moved, as an amendment, the postponement of the question. Mr. Legg seconded the amendment. The Chairman, as one of the Royal Commissioners, in a long address, said, as Parliament had provided the funds by continuing the coal duties, and as the first charge upon them would be for the Thames embankment, it was the duty of this board at once to proceed with the work which it was their right to perform; and there was not a day to be lost. Mr. Samuda strongly urged that there should be no delay, and that the construction of this embankment was a work which the Board ought to execute independently of any Royal Commission.

After some further discussion, the motion was put, when there appeared for the amendment, 8; against it, 27. Mr. Wilkinson then moved another amendment, that the Board should communicate with her Majesty's Government, and ask them to appoint their engineer to assist in carrying out the work. The amendment was negatived, and the original motion was agreed to.

DUBLIN "COLLEGE OF PHYSICIANS" COMPETITION.

Six architects were selected by the committee to compete for the carrying out of the works, and for a premium of 50*l.* The architects named were Messrs. McCurdy, Murray, Geoghegan, Turner & Drew, Butler, and Ferguson. The building was to cost 5,000*l.* The committee selected the design of Mr. Murray, to be carried out; and gave the 50*l.* prize to Mr. McCurdy. Some of the competitors assert that the premiated designs could not be built for double the money named; and will probably stir in the matter.

IMPROVEMENT AND TAXATION.

Strikes may be likened to quarrels between husband and wife.

The main fear of the workmen seems to be, that hands are in excess of work,—that for every ten men there is employment but for nine,—and that consequently, unless their Union always support the tenth man in idleness, the higgling of the market will eventually lower wages.

Machinery (as in the case of the brickmakers), doubtless, also frightens them, as employment may not always keep pace immediately with machinery.

All this is merely significant that taxation has passed the limits of endurance. I mean the weight is greater than can be borne, without sensible injury to the bulk of the nation.

Your article on Aldershott shows that a certain saving could be effected without weakening our national defences: nay, the very effort to save

would improve them. Now, were it possible to save two millions by the introduction of order, system, and efficiency into the Government departments, dockyards, and arsenals, the assessed taxes might be turned over to the local authorities.

These imposts not touching Ireland, the application thereof clearly should be local.

On the share of the metropolitan districts (486,270*l.*, for the year ending March, 1860), 10,000,000*l.* might be borrowed, which would enable the various street-improvements, mentioned in the Commissioners' report, to be carried out.

This done, the strike would, I think, settle itself; and after next year we need not point out to the foreign visitor, Fleet-street as the chief thoroughfare of the largest city in the world.

Again, may not the stagnation of trade in London, so universally complained of, have something to do with this matter? G. W. F.

COATING FOR INTERNAL WALLS.

DWELLINGS FOR THE WORKING CLASSES.

Can any amongst your readers afford me any information as to a material for coating internal walls of dwellings, without the necessity of first plastering them?

My object is this: I am about to erect a block of buildings for the accommodation of artisans and their families; and, from my experience in the dwellings of the poorer class, I wish to avoid the necessity of coating the walls, either with colour wash or paper, both of which speedily get discoloured and dirty; in which state they, too often, are permitted to remain — the fruitful parent of infectious disease.

The material I am anxious to procure is one which would bear a vitreous glaze, capable of being washed with soap and water; and it should also admit of the introduction of some colouring matter, to afford variety to the eye.

If no such material does exist, this might, I trust, lead the thoughts of some practical man towards so desirable an object, the discovery of which would be hailed as a great boon by all who take an interest in model dwellings.

An Agent.

PARK-LANE THOROUGHFARE.

Sir,—Allow me a small space for a suggestion on this subject, as I consider that action should be taken, if practicable, without delay, to prepare for the exhibition traffic next year, and for the present wants of the west end of Marylebone and the Edgware-road, in connection with the Victoria terminus. My plan is, I think, not open to the objections that can be raised to the various propositions already made; viz.—the enormous expense, and the opposition of holders of property required. It is simply this;—to enter from Park-lane the small enclosure or garden, south of Stanhope-gate, at an acute angle, a few yards from the lodge; throwing the present railing back from the right to the left hand, in a curved line to the corner of Apsley House garden; then add a new railing on the right hand from Stanhope Lodge to Hyde Park-corner, taking in one of the gates there and a compartment of the screen; three columns of which to be cleared away to make another gate for the public traffic; leaving ample space for the present fashionable drive. If required, also, a few yards could be got out of the body of the park, on the west side of the drive, by moving the railings back to the trees. The expense of this great public improvement should not exceed 1,000*l.* to 1,500*l.* Q. Q.

THE PRIZE PLANS OF LABOURERS' COTTAGES, &c., AT LEEDS.

The plans, of which we gave some account on the 16th March last, have just been exhibited at the meeting of the Royal Agricultural Society at Leeds. Among them were those of farm buildings, as to which no decision was come to when the prizes for the cottage plans were decided on. The following were the awards:—

For the best plan of farm buildings, adapted for a farm of not less than 500 acres, and providing for the use of steam-power, 50*l.*; J. E. Watson, 22, Grey-street, Newcastle-upon-Tyne.

Highly commended—Messrs. Hicks & Isaacs, Bath; P. D. Tuckett, London; James Fox, Albion-street, Leeds; and Mr. Gouthwaite.

Commended—J. Parsons, Harewood, Leeds.

For the best plan of farm buildings, adapted for a farm of 200 acres, 25*l.*, Messrs. Hicks & Isaacs, Bath.

Commended—Frederick Chancellor, Chelmsford, Essex; Messrs. J. Bailey Denton, and W. Burnett, Westminster, London.

In the first class there were twenty-seven competitors; in the second, nineteen ditto.

A double cottage, from the selected design by Messrs. Richardson & Ross, of Darlington, was some time ago erected by the Leeds Local Committee of the Royal Agricultural Society, on a plot of land belonging to the Conservative Land Society, adjoining the show-ground. The internal accommodation consists of three rooms on each floor, and the necessary offices. It has been built under the direction of Mr. Thorpe, of Leeds, and the cost has been strictly kept within the amount specified—220*l.* The cottage was to be offered for public sale in the course of a few days after the meeting of last week.

The Leeds Local Committee of the Royal Agricultural Society also offered the sum of 80*l.* for building designs, viz.:—

For the best pair of agricultural cottages, containing not less than three bedrooms in each, and with suitable conveniences attached, already built, or to be built by the 1st of June, 1861, within ten miles of the Leeds Town Hall, at a cost not exceeding 180*l.* £20

For the best single ditto, at a cost not exceeding 110*l.* £10

For the best design for covering a quantity of land with dwellings, in blocks suitable for working men in towns, at rentals varying from 6*l.* to 10*l.* per annum, and a cost which will allow of a return of not less than 7½ per cent. per annum upon the building outlay, exclusive of the cost of the land .. £50

For the first two prizes there were no plans entered. For the third there were only ten, and the judges reported that, as the competition was so limited, and the designs sent in were so little satisfactory, they had declined to award the prize. The judges recommend, however, that the premium be suspended, and that competing designs be again invited by advertisement, to be sent in by the 1st of October next.

A correspondent on this subject writes,—

"If you will refer to your paper of July 7, 1860, you will find the *prize* design (double cottage) nearly an exact copy of Mr. Strickland's plan, as published by you.

The great objection I see to the prize plan is—

1. The direct draught from back to front doors.

2. The manner in which the entrance door is cribbed: it could only open square, and then either against the closet-door or into opening of living-room door, and the staircase would not allow of its being much above 6 feet high.

3. The small size of pantry, there being no cellar.

4. Only one door to scullery, and that opening in entrance. Each time coals are required, clothes taken out, &c., all the steam, heat, and smell from washing, &c., find their way into entrance and bed-rooms.

5. The sinks are badly situate for light.

6. The privies much too small.

7. No dirty-clothes closet on chamber plan—*a most desirable* thing in a cottage: as wardrobes, presses, &c., do not form part of a poor man's furniture, consequently the bedrooms are always in an untidy and fluttered state, unless a closet be provided.

8. The only interior brick wall carried up to roof is the cross or division wall: the rest have false bearings. R."

THE PRESERVATION OF LIFE FROM FIRE.

Sir,—There is probably no subject connected with "social" economy of greater import than the preservation of life and property from fire; and with an equal confidence I fear it may be asserted that there has been none more *disgracefully* neglected, and where so little *practical* good has been effected towards the attainment of these objects.

From time to time various suggestions have appeared from many persons (the writer being one of them), and some of them bearing evidence of practical utility; yet such has been the public indifference to the subject that none of these have been taken in hand and brought into practice. Let us have hope, however, that attention has been aroused to this truly important question, and that this terrible scourge may be, if not overcome, at least greatly subdued.

To assist escape from the roof, a handrail should be affixed to the wall thereon dividing each house, and upon the coping of the wall in front of each building, and facing the thoroughfare. This protection would also be useful at the *rear;* but perhaps it might not be necessary to make the provision in both parts. The depth from the gutter to the coping is usually very shallow and dangerous; and, in a time of fire, when the nerves are liable to be weak, the power of balance is easily lost, and individuals frequently fall over and are killed. Were such a measure of safety furnished for the bricklayers and others engaged in building operations, it would be well worth consideration.

As a means for the extinguishment of fires it is suggested that a series of pipes might be built into the ceilings of rooms, perforated with numerous holes; these being in connection with a tank on the roof, or any other suitable place. The water might be let loose in many ways.

Large and specially-made mattresses should be carried by all fire-engines; or in "tender" carriages, either attached to or *following* them. These might also be built with plenty of spare room, so as to accommodate any other appliances that may be already in use, or devised hereafter. Fire-escapes might also be so constructed as to find space for the same accessories.

It is a long time before the flow of water from fire-engines makes any sensible impression or subduction of a fire, even though several may be in use at the same time, and their capability great. It seems feasible and consistent with our increased and rapidly increasing knowledge of chemical agencies, that some product might be employed in combination with water to assist its action on the flames. Sulphate of ammonia is one (out of many) of these agents, which appears calculated to play the part of an auxiliary. It is an inexpensive article, and can be produced to almost any extent that may be required. A self-feeding "hopper," or reservoir, might be contrived, communicating with a tank to be attached to an engine under its pump apparatus; the water, instead of being thrown *directly* upon a fire, being first pumped into the tank, there to be infused by the chemical, and thence injected on the burning mass. Whether this suggestion be, or not, practicable, it is certain that the injection of water alone is far from being satisfactory; for it is notorious that when a fire has gained an ascendancy, instances are very rare where it is got under until the property and interior is utterly destroyed, and the fire spent out, from a deficiency of combustible material, or suffocation, by the falling in of the roof or other portions of the building. The water thus chiefly effects the cooling down of the incandescent mass; or, by continuously watering the walls of the fired and adjacent houses, prevents its spreading further. Therefore, an increase of subduing power seems imperatively needed. And this could (there is scarcely reason to doubt) be effected by the aid of chemistry.

Fire-escapes might be advantageously constructed in a curved form at the top, so as to keep them farther off from the walls, and thus prevent the possibility of a fire catching the escape or the clothing or bodies of the persons using it for escaping. The wheels of these should be furnished with "skids," or some similar apparatus, to prevent the escapes moving after they are placed against a wall.

There is a Society for the Preservation of Life from Fire. Its operations and the escapes provided are, however, on a much too limited scale; and its proceedings are seldom heard of; offering a striking contrast to a similar institution for saving life from shipwreck. More actively encouraged and prosecuted, it might be rendered thoroughly efficient; and no life would then be sacrificed in consequence of the escapes being *too late;*—a circumstance now unhappily by no means unfrequently occurring. To be fully serviceable, there should be at least four times as many escapes as there are at present; and they should, of course, increase hereafter according to the ratio in which the population increases. It might tend greatly to the public advantage if prizes of money or medals were offered yearly for any novel and serviceable invention relating to life or property preservation.

It is conceived by the writer that an important means towards the preservation of life would be by erecting *escape shafts,* attached to the *backs* of houses; one to every two houses, or to each house; these, to reach from the basement to the top room window, and at the sides of the windows of each story. These should be sufficiently large to permit a human body to descend without inconvenience. They should be made perhaps of plate iron, or of wood covered with thin plates of *tinned* iron outside, as a protection from the dangerous proximity of the burning house. Where expense may be unimportant, it would probably be a better plan to build them of brick, and construct them as portions of houses, and at the time when these latter were in course of being erected. Inside these shafts or tubes a "skip" or tub should be capable of descending or ascending; the rope attached to which should pass over a small drum wheel fixed to an iron axle; the other end of

which to be secured in a block of stone built into the house wall for that especial purpose. This wheel to be placed on the side of the shaft furthest from the window. At the other end of the rope a weight is to be fastened exceeding the weight of the "skip;" so that when the latter is free from the burden of a human body (or bodies), who may use it as a means of escape, it would rise to the top of the shaft, and be ready for use again, the weight of course falling to the bottom. As the "skip" or bucket will work in the shaft, the most timid person need have no apprehension as to falling out. The "shaft" should have frequent openings for air and light; indeed, if made of iron or wood, it might be constructed after a trellis-work fashion, and almost entirely open.

M. M.

OPENING OF THE BRITISH MUSEUM TO THE PUBLIC BY GASLIGHT.

Sir,—If I understand the question rightly, the late Mr. Braidwood recommended the use of oil in preference to gas, on account of the desiccating properties of the latter.

The subject under discussion is one of the highest importance to the public generally, the reason urged against the introduction of gas into the Museum being equally applicable to buildings devoted to other purposes. Now, I have to learn that any practical medium at present exists which, whilst imparting the same amount of light, gives off a less degree of heat. In a lecture delivered at the Royal Institution in 1853, Dr. Frankland thus estimates the amount of "carbonic acid" and "heat," produced per hour from various sources of light, the heat generated by tallow being assumed to be 100, for the purposes of comparison:—

	Carbonic acid. Cubic feet.	Heat.
Tallow	10·1	100
Wax } Spermaceti }	8·3	82
Sperm oil (Carcel's lamp)	6·4	63
London gases:—		
City } Great Central } Imperial } Chartered }	5·0	47
Western	3·0	22

It will be seen from the above that there is a marked difference, and one greatly in favour of gas, both as regards the production of a less amount both of carbonic acid and heat; the comparison between the (cannel) gas supplied by the Western Company showing a difference, as compared with oil, amounting to no less than 41 per cent. Dr. Frankland remarks (article, "Coal-Gas," Ure's Dictionary of Arts), that,—

"Notwithstanding the great economy and convenience attending the use of gas, and, in a sanitary point of view, the high position which, as an illuminating agent, coal-gas of a proper composition occupies, its use in dwelling-houses is still extensively objected to. The objections are partly well founded, and partly groundless.

As is evident from the foregoing table, even the worst gases produce, for a given amount of light, less carbonic acid and heat than either lamps or candles. But, then, where gas is used, the consumer is never satisfied with a light equal in brilliancy only to that of lamps and candles, and, consequently, when three or four times the amount of light is produced from a gas of bad composition, the heat and atmospheric deterioration greatly exceed the corresponding effects produced by the other means of illumination. There is, nevertheless, a real objection to the employment of gas-light in apartments, founded upon the production of sulphurous acid during its combustion. The sulphurous acid is derived from bisulphuret of carbon, and the organic sulphur compounds which have already been referred to as incapable of removal from gas by the present methods of purification.

These impurities, which are encountered in almost all coal-gas now used, are the principal, if not the only, source of the unpleasant symptoms experienced by many sensitive persons in rooms lighted with gas. It is also owing to the sulphurous acid generated during the combustion of these impurities that the use of gas is found to injure the bindings of books, and impair or destroy the delicate colours of tapestry. Therefore the production of gas free from these noxious sulphur compounds is, at the present moment, a problem of the highest importance to the gas manufacturer, and one which demands his earnest attention.

The high sanitary position which gas takes with regard to the production of a minimum amount of carbonic acid and heat for a given amount of light, ought to stimulate the manufacturer to perfect the process by removing all sulphur compounds, and attaining the most desirable composition, so that this economical, and, if pure, agreeable, and sanitary light, may contribute to our domestic comfort to a much greater extent than it has hitherto done."

It is abundantly clear, from the doctor's very lucid exposition, that the objection to the use of gas on account of the extra heat supposed to be generated is, as compared with other sources of light of equal brilliancy, nothing more than a popular delusion; and that the strongest objection that can be urged against the introduction of gas into buildings (of a similar description to the British Museum) containing articles likely to be injuriously affected by the action of sulphur, is the presence of this element in the form of bisulphide of carbon, which (until the discovery of the Rev. W. R. Bowditch) had hitherto been looked upon as irremovable. Now that means have been discovered, and can be applied in rendering gas free from all impurities, I cannot understand what real objection can exist for the exclusion of this valuable light-giving medium from our national Museum.

Samuel Lovelock.

THE BUILDERS' STRIKE.

Sir,—"A Contractor," in your paper of the 27th of July, takes me and others to task for having passed "into the position of unscrupulous advocates," and for arraying and arranging one-sided facts and arguments. He says, too, that we have stated in our letters "nothing which had not been already stated." I am not going to defend myself or my friends against the former charges. There are the letters: let them speak for themselves. But if he wants facts not already stated, I can give him plenty. Here is one in the shape of a letter from Scotland, which I shall be obliged to you to print, which needs no arraying or arranging, and which will help your readers to judge between our statements and "A Contractor's." I would suggest that these are not the means which honourable men use, even in fighting. If "A Contractor" can stop this sort of thing he will be doing good service to his order.

Lincoln's-Inn, July 30. Thos. Hughes.

Sir,—In the last of the admirable letters on the dispute in the London building trades, to which your name is attached, it is asked,—"Why, if the dispute is virtually at an end, are masons being imported from Scotland?" On seeing the repeated assurances in the *Times* and other London papers, that the employers had got nearly all the men they required, it seemed strange, if not suspicious, that efforts should be making to get masons from Scotland. The reference to this matter in your letter, and other causes, having induced me to make minute and personal inquiries, some rather significant facts have been elucidated.

It now appears that the efforts have been both extensive and desperate. Agents have visited almost every town in Scotland, and not a few villages and populous districts; and every means have been resorted to for the purpose of inducing workmen to go to London. For example, in Arbroath, 33s. per week, expenses of trains to the destination, and no broken time, were some of the inducements presented; while it was reported that "the dispute between the Union and non-Union men in the metropolis is the cause of this application to masons in the north." In every case, so far as can be ascertained, the nature of the dispute was either misrepresented, or entirely ignored.

The London operatives having sent two of their number to Scotland for the purpose of removing misconceptions, and means having been employed in Scotland with the same view, the actual state of matters gradually became known; and there is good authority for saying that, notwithstanding these efforts, little more than thirty masons accepted the offers, this number including apprentices, and inferior or otherwise worthless hands. A few have returned to Scotland, and more will likely adopt the same course.

Such is the result of the London employers' mission to Scotland. Small enough, certainly. And now other and less honourable means have been resorted to, on the authority of whom it is not for me to say. The transaction, however, merits exposure and reprobation.

The publisher of the *Edinburgh News* received on Saturday last the following letter, dated July 26th, with enclosure, from an advertising firm in London, whose name and address I enclose:—

"Sir,—We would feel obliged by your inserting the enclosed announcement (without the word advertisement) in the body of your paper, forwarding a COPY, with the CHARGE, to this address.—We remain, &c."

Here is the announcement:—

"*Scotch Masons in London.*—It will be a curious fact in the history of the splendid mansion now being erected for the Duke of Buccleuch on the site of the old Montague House, in Whitehall, that, from peculiar circumstances in connection with the building trade in London, it will have been built to a large extent by Scotch masons. Many of the London men, tired of the unhealthy condition of their craft, owing to the undue control exercised by the paid leaders of the strike, have left the metropolis, and thus afforded opportunities for new hands to obtain employment. Scotland, where building in stone is more common than in England, has sent up a great number of masons, and when first-rate workmen have applied, their expenses to London have been paid by the duke's contractors, Messrs. Holland & Hannan, of Bloomsbury."

I leave this without comment. A cause which requires such desperate expedients must be a bad and a failing one. I am aware other papers have received similar communications, and trusting this exposure of what looks very like a cunningly-devised fraud will break its influence, and be a warning to the perpetrators, I am, &c.,

H. G. Reid.

"*Edinburgh News*" *Office, Edinburgh, July* 29, 1861.

WAYSIDE CHAPELS.

At a recent meeting of the Bedfordshire Architectural Society, Mr. Hurst read a paper on "Wayside Chapels." After some introductory remarks, in which he stated that the paper he was about to read must only be considered as a nucleus for a more comprehensive treatment of the subject; he observed that the remains of monastic and other religious edifices, erected during the early period of our national history, had lately occupied very much of the attention of architects and antiquaries; but there was one kind of building that had received from them comparatively little notice, but which merited consideration; as, from its existence and purposes, much might be inferred respecting the habits and ideology of our ancestors: he alluded to the Wayside and Bridge Chapels.

The intention of these chapels seems to have been to afford to travellers, pilgrims, and the people generally, in their journeyings, an opportunity at various stations to offer up to the Throne of Divine Grace thanksgivings for deliverances from peril, and for other mercies; and to implore assistance, protection, and guidance, in the many casualties of this life. Previous to the Reformation, the Wayside Chapels, remote from inhabited places, gave shelter, rest, and religious consolation to the traveller. Like all other places of public worship, the doors during the day were always open. The church was formerly a house of prayer, but it is now frequently styled a place of hearing; and, strictly in character with this appellation, is locked up and bolted against private devotion. He then remarked that although many excellent customs, like that of keeping open the doors of places of worship, had fallen into disuse, there were others often very unimportant still lingering among them. At Eaton Bray, in this county, until within the last twenty years, the church was regularly strewed with bean straw on the feast day, which occurred at Michaelmas. At Pavenham, the practice still prevails of littering the church with hay on St. Peter's day, which is the feast day. For this purpose the clerk has the privilege of cutting as much grass in the meadow near Stafford-bridge—a part of the great tithe allotment in that parish—as he can mow from sunrise to sunset in one day. The quantity obtained beyond what is required for the church he takes as a remuneration for his trouble. There were two bridge chapels on the passages of the Ouse, one at Biddenham Bridge, and the other on Bedford Bridge, used also as chantries. The one at Biddenham, which is said to have been well endowed, probably had services performed in it for the repose of the soul of the founder, and was charged with keeping the bridge in repair. The chapel on Bedford Bridge was dedicated to St. Thomas the Martyr: the date of erection was the early part of the fourteenth century, a century later than the bridge itself, which was built with part of the materials of the castle, demolished in the year 1224. It has been generally stated that the author of the "Pilgrim's Progress" was imprisoned in the gatehouse of the bridge; which, judging from the drawings that have been engraved to illustrate "Gross's Antiquities" and various editions of Bunyan's works, appears to have been erected between the second arch from the north and the centre of the bridge. The wayside chapels were suppressed and their estates forfeited with the general dissolution of monasteries. He then gave some particulars of a building in the parish of Meppershall, once used as a wayside chapel, but now converted into a barn. Meppershall is partly in Bedfordshire and partly in Hertfordshire. The chapel is admitted to be in the Hertfordshire portion of the parish. The rectory-house is supposed to have a portion in each county, as was expressed in an inscription on the mantelpiece, but which modern taste has removed,—

"If you wish to go into Hertfordshire,
Hitch a little near the fire."

LEAD PENCILS.

As I was the inventor and patentee of the pencil now universally known as "Lund's Pencil;" as my father's money founded the firm of S. Mordan & Co.; as my father was one of the largest purchasers of Cumberland lead, as correspondence with the firm of Brookman & Langdon will prove, inasmuch as that firm learnt of my father, and possibly he learnt of them;—allow me a word on the above subject.

Mr. Brockedon was an artist. Mr. Brockedon gained a Council Medal at the Great Exhibition of 1851, for his discovery and invention of purified and compressed Cumberland lead.

The respected firm of S. Mordan & Co., and the respectable firm, Brookman, Langdon, & Co., know well with what anxiety the gradually exhausting quarry or mine of Cumberland filled their minds. Every market-day more and more lead was rejected; the gritty refuse of the once valuable but now nearly exhausted mine.

Mr. Augustus Mordan told me that Mr. Brockedon suddenly acquired a Bright idea—for the *peace*-ful *reform* of—not the British constitution, but black lead of Borradaile.

Mr. Brockedon pulverised the gritty refuse of rejected heaps of market-days: he separated the grit from that unctuous substance of Cumberland which so puzzles philosophers and geologists, and is so coveted by artist and by draughtsman. Mr. Brockedon took the fine dust, and (probably *in vacuo*) submitted it to great pressure, much harder pressure than bill-discounter gives when he puts "the screw on;" much harder pressure (though that is hard) than Jacob gives to Nancy in the return home pleasure-van.

With a palpitating hand doubtless Mr. Brockedon removed that which was no longer dust, but solid "clay" from the press: with delight did he exhibit the "new solid" to Mr. Augustus Mordan.

After that, until Mr. Brockedon's death, I feel certain that all that could be done for artists and draughtsmen was done by Brockedon, by S. Mordan & Co., and,—for *writers* who had been used to the *touch* of the genuine article,—by that Lund, the excellence of whose manufactures requires no comment from me.

But Mr. Brockedon is dead. His invention did not die with him, for Lund's best pencils are filled with the lead of Brockedon: Mordan's are likewise: Brookman's are—probably.

Has the writer of a complaint in your impression of the 27th ult. tried the pencils of these firms?

I can testify to much difficulty in getting a pencil firm at the extreme point, black, and capable of proper erasure by plain, old-fashioned indiarubber. As to that new-fangled eraser, something between a hearthstone and a Kamptulicon knife-board, it would rub its way through anything.

The firms I have named in the foregoing statement thoroughly understand the subject, and only require perhaps a little spurring by artists and draughtsmen. The fact of Mr. Brockedon getting a Council Medal shows that the subject was considered a very important one.

W. Riddle.

RECENT PATENTS CONNECTED WITH BUILDING.*

Artificial Stone. *J. J. Wheble*, Reading. Dated 7th December, 1860.—The patentee takes ordinary dry rubbish, sand, gravel, and shingle, and mixes the same with Bridgwater, or other similar lime, after being ground, when the whole is to be stirred and thoroughly mixed. Water is now to be added, and well incorporated with the material, which is to be placed in suitable moulds and frames, the moulds being first lubricated.

Manufacture of Fire-bricks, Blocks, Retorts, &c. *W. Morris & J. Radford*, Oldbury. Dated 7th December, 1860.—This invention consists in the employment of boulders or pebbles, calcined, or partially calcined, and reduced to powder: this the patentees mix with common fire-clay, marl, loam, or other stiff clay. They also employ, for some purposes, stone of the description found in large quantities in Worcestershire, more particularly in the vicinity of Rednall, and which is there termed "gravel rock." This they can use either pulverised or in its natural state, mixed with the clay, and in place of, or with the ground pebbles.

Ornamental Bricks, Tiles, &c. *T. W. Walker*, Poole. Dated 17th December, 1860.—In making an encaustic tile, according to this invention, where, say, two colours only are used,—namely, for example, a red ground with a buff pattern,—the patentee takes a block of buff-coloured clay, and places it in a suitable box or receptacle, of a shape corresponding to that of the tile to be produced. The surface of this block clay is now stamped with any suitable design, by means of a suitable die, composed of flint and clay, burnt and hardened, or of any other suitable absorbent material. The impression having been made, he lays over the impressed surface a thin slice or bat of red clay for the ground, and brings the die down again, thereby forcing portions of such thin slice into the lower or sunk parts of the impression already made in the surface of the buff clay, so as to inlay the red clay therein. The die is now taken away, and the waste clay left on the surface is removed, when a piece of clay for forming the back or body of the tile is laid over the inlaid surface, and pressed thereon in a movable backing frame, so as to complete the body of the tile. The movable backing frame having been raised, a cut is made, by means of a fine wire, through the clay, at the part where the red clay has entered the buff clay; the result of which is, that the red and buff will appear on the surface of the tile, the one forming a ground, and the other a pattern, or design, inlaid thereon.

Bricks. *W. E. Newton*, Chancery-lane, London. A communication. Dated 8th December, 1860.—This invention relates to that class of brick machines designed for making bricks of dry clay, through the agency of great pressure exerted thereon, and consists in constructing the entire frame in one large single body. The moulds are formed, arranged, and secured within the frame, in such a manner as to entirely expel the air from the clay. A suitable arrangement, or combination of parts, is also provided for lifting the bricks from the moulds.

Apparatus for the Manufacture and Drying of Bricks, &c. *J. Sharp* and *W. Balmer*, Middlesborough. Dated 26th November, 1860.—These improvements consist in the employment, in a trough or case, in or to which the moulds or dies are fitted, and into which clay is placed, of a shaft with two or more curved arms or wipers in combination with a cranked lever, free to play on a fixed point on which it is centred or hung. The lever is so placed with regard to the wipers on the shaft that, upon the revolution of the shaft, one wiper coming in contact with the short arm of the lever, causes it to move on its centre; and, consequently, the long arm to be raised, whereby the clay is prevented from being carried round by the next "wiper;" and, at the same time, a species of channel is formed in the direction of the moulds or moulding orifices in the box or case. The following or next wiper in succession bears against the raised long arm of the lever; depresses it, and thereby forces the clay in front of it through the moulds or moulding orifices, and so on.

* Selected from the lists in the *Engineer*.

Miscellanea.

The National Gallery.—In reply to a question by Lord H. Lennox in the Commons, as to accommodation for the Turner pictures in December next, Mr. Cowper stated that there was no plan of Mr. Pennethorne's for a National Gallery in such a state of maturity as that it could be produced. The great difficulty that presented itself was that they had two sites,—Trafalgar-square and Burlington House. There would be no difficulty whatever, he said, in building a gallery over the back of the barrack-yard, at a trifling expense, as it would not require much architectural ornament. The cost would probably be about 25,000*l*. He trusted that plans would be ready before the House was asked to agree to any estimate next year.

Discovery at St. Martin's Church, Leicester.—An interesting discovery has been made at St. Martin's Church, Leicester, according to the local *Advertiser*. While excavating for the foundations of the staircase turret at the north-east corner of the north transept the remains of two pillars of Roman workmanship were discovered at about 9 feet below the surface, standing about 8 feet from each other, on a stone platform. The pillars are 21 inches in diameter, and of the Doric order. They appear to be made of the Sandiacre stone, near Ilkeston, and probably formed part of a colonnade or portico. This seems to substantiate the suggestion made some time ago, that a temple formerly stood where the church now is. A considerable quantity of animal bones have been dug up also, suggesting that the place has been used for the purpose of Pagan sacrifice. A little below the level of the platform a bed of concrete, about 3 inches thick, was found, which, no doubt, once supported a tesselated pavement, but no Roman tiles were found. The columns were observed to be solidly embedded in mortar on the platform, showing that they were in the position in which they were originally fixed, probably some sixteen or seventeen hundred years ago. Further excavations are now in progress, and Mr. W. Lindley, the clerk of the works, is preparing a plan, elevation, and section of the discovery.

Monumental.—The inauguration of the monument to Charles Albert, the late King of Sardinia, and father of Victor-Emmanuel, King of Italy, took place at Turin on the 21st July, on the square bearing the name of Charles Albert. Baron Ricasoli delivered a speech suitable to the occasion, at the end of which the veil was removed, and the new work of Baron Marochetti was displayed to view, amid the enthusiastic cheers of the multitude. The king is represented on horseback with his sword drawn, and in the act of calling the people to rally round him. The pedestal supporting this equestrian statue is of Scottish granite, beautifully polished, and rests upon a basement of the same material, the four sides of which each presents a niche occupied by an allegorical statue, severally representing Italy, Liberty, Justice, and the martyrdom of Charles Albert in the cause of freedom. Lastly, this basement itself rests on a vast plinth of greyish-blue granite, at the four corners of which stand as many bronze statues representing different types of the Sardinian army—viz., an artilleryman, a lancer, a grenadier, and a bersagliero. The insignia of Grand Officer of the Order of St. Maurice and St. Lazarus was conferred upon Marochetti on the occasion.——In the *Journal des Debats*, there has appeared a scientific article, by Mr. Babinet, which ends with these words—*apropos* to the fact that no national monument has been raised to Newton by the English:—"Does not England fear that the entire family of European nations should be beforehand with her in this pious duty? Does she not fear lest a monument should be raised to him, by whom all human nature so justly sets such store, and that on it should be inscribed—

'A Newton,
Anglais,
Toutes les nations
Reconnaissantes,
Moins l'Angleterre
Ingrate.'"

The Ascot Hotel and Stables Company.—At a meeting held in the Stewards' Stand at Ascot Heath, on the first day of the races, a site was chosen for the project on the Kennel Allotment, near the junction of the Reading and Windsor roads. The buildings will enclose an area of two acres, and an additional two acres will be appropriated for garden and pleasure ground. The hotel and stables will be built in the Italian style, and contain all the requirements for its object—viz., the accommodation of thirty trainers and one hundred race-horses during the race week; and at other times it will be used as a public hotel. Among the directors of the Company are the Earls of Besborough, Portsmouth, Strathmore, and Coventry. Mr. J. F. Clark, of Newmarket (the racing judge), is appointed the secretary and architect to the company.

The proposed High Premiums on Fire Insurance.—A meeting of merchants, wharfingers, warehousemen, and others interested in fire insurance, was held last week at the Egyptian Hall, Mansion House, for the purpose of considering what steps should be taken with respect to the increased rates lately issued by various companies. The hall was crowded, and the meeting was called by the Lord Mayor, in response to a requisition, numerously signed. Mr. Crawford, M.P., was unanimously voted to the chair. Resolutions were unanimously passed to the effect that the proposed rates issued by the combined fire offices, who virtually form a monopoly, are manifestly unjust and excessive; and would, if submitted to, be the means of converting an unparalleled calamity into the basis of a permanent source of exorbitant profit; that thus an inducement would be offered to incur the hazard of non-insurance; and that such a temptation to imprudence would diminish the protection which the caution of the mercantile community has hitherto enabled them to secure to their property." It was also unanimously resolved to use all lawful means, by the formation of a new company, or otherwise, to oppose the establishment of the proposed new rates of insurance; and that a committee be appointed to consider the best course to be pursued towards that end. A gentleman from the Globe stated, among other apologetic remarks as to the increase of rates, that they were temporary, and imposed for the purpose of inducing dock proprietors and merchants to carry out the improvements in construction which the companies had suggested; and when that was done, and the risk of course diminished, they would be ready to make a large remission.

Ecclesiastical Dilapidations. — The Bill which the Bishop of London has laid before the House of Lords, with a view to its being considered during the recess, proposes that in every diocese surveyors of ecclesiastical dilapidations shall be elected by the archdeacons and rural deans, with the approbation of the bishop; and these surveyors are every five years to inspect the buildings belonging to the benefices in which there are buildings the incumbent is bound to maintain in repair, and to report thereon to the bishop, stating what repairs are needed, and what continuing charge ought to be made on the benefice in respect of the cost thereof, and by what instalments (not exceeding 30) it ought to be paid off. A copy of this report is to be sent to the incumbent; and if he makes objections to it they are to be considered by a referee selected by the bishop. Subject to any modifications made by the referee, the incumbent is to execute the works as prescribed in the surveyor's report, and is to be free from any further demand for dilapidations until the next quinquennial inspection, except in case of wilful waste, or damage by fire, flood, or tempest. Where there is to be a continuing charge on the benefice in respect of the cost, he may obtain an advance from the governors of Queen Anne's Bounty. He is to insure the buildings belonging to the benefice. The Bill is to apply also to buildings which deans and canons are bound to maintain in repair, and, in a modified form, to bishops' houses. To provide a fund for the remuneration of surveyors, &c., and for the other expenses, the archdeacons and rural deans are to fix, with the approbation of the bishop, an annual percentage to be paid on the net yearly value of the bishopric, and every deanery, canonry, and benefice of more than 50*l*. a year value. The Bill contains also provisions for the reduction of the size of a house of residence too large and expensive, with the concurrence of the surveyor, subject to a right of appeal on the part of the patron to the bishop. On the other hand, an incumbent is not to make any addition to the buildings at a cost exceeding 100*l*. without the bishop's consent.—*Times*.

Tramways in the Metropolitan Districts. The local authorities of Southwark have granted permission for the laying down a double line of street rails along the Waterloo, Borough, Blackfriars, London, Westminster Bridge, and New Kent roads, Newington-causeway, Stones-end, and Blackman-street. The authorities of Westminster have given an opinion unfavourable to the extension of the Victoria-street tramway over Westminster Bridge, to unite with the beforementioned line.

The International Exhibition of 1862.—Her Majesty's Commissioners for the International Exhibition of 1862 have requested the following gentlemen to act as a committee, in connection with Class I. (mining, quarrying, metallurgy, and mineral products), in the coming Exhibition:—Sir R. Murchison, D.C.L., F.R.S.; Professor Warrington Smyth, F.R.S.; Professor Percy, M.D., F.R.S.; Professor Ramsay, F.R.S.; Professor Maskelyne, F.R.S.; Mr. Hussey Vivian, M.P.; Mr. Samuel Blackwell; Mr. Nicholas Wood; Mr. Thomas Sopwith, F.R.S.; Mr. R. B. Grantham; and Mr. J. Rawson Barker.

Plymouth Improved Dwellings for the Poor.—At a recent meeting of the local company for providing dwellings for the poor a dividend of 2 per cent. was declared. The report states that in May, 1860, this Association purchased a site on one of the highest and healthiest parts of the town, for 1,937*l.* 5s. 4d.; and suitable plans being approved, the Association began to build. At Christmas thirty-five cottages were completed; and, subsequently, fourteen have been added; making together, forty-nine, all of which were tenanted immediately on completion. Including the purchase of land, the present outlay, with outstanding liabilities, amounts to about 7,542*l.* 12s. 3d. The cottages are of two classes, differing slightly in their arrangements and in the size of their rooms. There are fifteen larger cottages, let at 7*l.* 10s. per annum, and thirty-three smaller cottages, let at 6*l.* 10s. per annum, one cottage being already disposed of. At first, owing to the great wetness of the season, it was found impossible to dry the walls properly; and whilst this inconvenience continued, considerable deductions from the rent and allowances for coal had to be made; so that the entire rent received from September, 1860, to June 30th, does not represent half a year's rent. The directors fully expect that next year the probable returns will authorise a dividend of about 4 per cent. per annum. They have erected on the property a suitable reading-room and library, with offices, at the cost of 387*l.*, with a residence, which is occupied, rent free, for superintending and keeping the rooms in order, and attending to the library, with the privilege of providing coffee.

Means of Extinguishing Fires in London. This subject, as one well worthy the attention of Government, was brought before the Commons last week by Mr. Hankey, who admitted that the present arrangement was a great improvement; but still, he said, it was wrong to leave the protection of the metropolis from fire to the insurance offices. Although in one sense it might be to the interest of insurance companies to put out fire, yet their premiums were based upon a calculation of risks; and, if the fires doubled in number the premiums would be doubled also. [And if all fires could be prevented, he might have added, there would be no profits to insurance companies at all, because no one would insure; so that the companies have a clear interest in the continuance of fires.] If anything ought to be taken up as a municipal question, it was the protection of life and property against fire. In Paris there were 800 of the *sapeurs pompiers*, a most efficient fire brigade. In Edinburgh, Dublin, Liverpool, and Manchester, the extinction of fire was a municipal arrangement; and there was no continental town in which the same system did not prevail. In London alone there was no such system, and this important object was left to depend on voluntary exertions. Our public buildings were unprotected; and, considering the invaluable property which they contained, this was a most unsatisfactory state of things. He believed that the whole of the existing fire-brigade establishment would be handed over to the public on equitable terms, if they would take charge of it; and the companies would be glad to be relieved from a duty which he did not think ought to fall upon them at all. He hoped the matter would be considered by the Government during the recess. Sir G. C. Lewis concurred as to the importance of the subject as one requiring consideration. A concatenation of the parochial fire-engines under one management, he thought, would be an improvement on the present almost useless parish fire-engine practice.

Unadulterated Food and Drink: an Equitable Grocery Consumers' Company. — The inveterate practice of adulteration amongst tradespeople, and the difficulty of reaching the delinquents, even under the new law, appear to have induced several respectable gentlemen to form a provisional committee for the establishment of a new company, under the Limited Liability Act, for the purchase of pure groceries from importers and others at first hand, and their sale to the public on principles similar to those which have been so successful at Rochdale and elsewhere. The capital of the company is to be 100,000*l.*, divided into 20,000 5*l.* shares, of which no one individual shall hold more than a single share; the shareholders to elect twenty-four directors; and the profits to be divided thus;—5 per cent. to a redemption fund, either for extension of business operations or reduction of capital, and the remainder one-half as dividend on capital paid up (1*l.* at first on each 5*l.* share), and the other as bonus or discount on purchases by shareholders. The secretary is Mr. E. Hodder, and the offices are at 124, Fenchurch-street.

Builders and their Workmen.—One of those friendly re-unions that tend to perpetuate a good feeling between master and man took place on Saturday, the 27th of July, at Rosherville Gardens. This was the annual dinner of some of the London *employés* of Messrs. Lucas, Brothers, builders, Belvedere-road. The company were conveyed by steam-boat from Westminster Bridge. In the unavoidable absence of Messrs. Lucas the chair was filled by Mr. Hadfield, one of the principal foremen of the firm, who was supported by Mr. Bayes as vice-chairman. After the cloth was withdrawn, and the usual loyal and patriotic toasts had been given, the chairman gave "The Health of Messrs. Lucas and their Families," which was drank with great enthusiasm, and responded to by Mr. Bullivant, general foreman, and Mr. Aspinel, manager in the plasterers' department. The health of Mr. Stevens, the principal superintendent of the firm, was also drank, and responded to by Mr. Daniel Steele. Another toast was also given, that of the architects of London, associated with the name of Mr. Henry Currey, from whose designs the London Bridge Terminus Hotel is now being erected, by Messrs. Lucas. This toast was replied to by Mr. Harris. Dancing and other amusements finished the day.

New Museum, Cologne.—The new museum built in Cologne, mainly by the donations of Herr Richartz, was inaugurated on the 1st of July. The *Athenæum* says, the new edifice has been designed and erected by the Cologne architect, Herr Felten. It abuts at its southern side on the church of the Minorites. Its cloisters, which form the base of the new building, belonged to the convent of the Minorites. The other three sides round the building have been laid open and arranged for pleasure-grounds. The old city has reason to be proud of this new acquisition, not as an ornament alone, but as a memorial of patriotism and devotion of two of its citizens, both of whom have given their names to the edifice, which is called Museum Wallraf-Richartz. Ferdinand Franz Wallraf, born in 1748, laid the first foundation of the museum by his collections, which he had amassed with the assiduity and passion of a true lover of objects of art and curiosity. His means were slender, and he often suffered from hunger and cold in order to satisfy his passion of collecting objects of art. In 1818, when Wallraf was thought to be dying, he bequeathed his collections, consisting of coins, minerals, paintings, books, engravings, &c., to his native town, with the only condition that it should preserve, protect, and never part with them. He recovered once more; and the town, in gratitude and acknowledgment for his sacrifices and self-denials, fixed a yearly income of 4,000 francs on the devoted amateur. A love and understanding for art, after it had been sleeping for many years, became more and more prevalent at Cologne. Dr. Sulpice Boisserée left to the town, at his death, in 1854, his valuable collections. More and more the want of a proper building for all these treasures of art was felt, till at last Herr Richartz, by his large donations, enabled the town to have a proper building for them erected. Herr Richartz did not live to see his work finished: he died last spring, lamented by his fellow citizens. He was a self-made man, and had raised himself from poverty to such wealth as enabled him to present a rich city with this fine temple of art. He has stipulated, moreover, for a certain sum for the purchase of pictures, and another for the ornamentation of the hall with frescoes; the execution of which has been intrusted to Professor Steinle, of Frankfort.

Public Buildings.—Mr. B. Cochrane gave notice to move early next session for a select committee to inquire into the state of the public buildings erected by Parliamentary grants within the last twenty years, and also of the houses rented for the public service, and to examine whether, by adopting more comprehensive plans of building, greater public convenience, greater economy and unity of design, may not be attained.

Enlargement of Sir J. Williamson's Rochester Free Mathematical School.—The contract for the enlargement of this school was given by the governors to Mr. K. Spicer, builder, Strood, that gentleman's tender for 1,150*l.* being the lowest. Mr. Spicer has, however, since written to the governors, intimating his intention of declining the contract. Under these circumstances, according to the *South-Eastern Gazette*, the contract will be given to Mr. J. G. Naylar, of Rochester, whose tender for 1,163*l.* was the next lowest in amount.

London Diocesan Church Building Society.—The seventh annual report of this society has been published at the office of the society, 21, Regent-street, Piccadilly. The objects of this society are more extensive than the brevity of its title would imply. It comprehends a complete scheme of church extension, and gives aid towards the building, enlarging, and endowing of churches, the erection of temporary places of worship, the purchase of sites, the building or purchasing of parsonages, and the employing of missionary curates in destitute districts. Of course all these objects are limited to the metropolis. The report shows a sum of 6,885*l.* expended in grants, &c., during the past year, and gives a list of numerous works in progress or in contemplation, churches consecrated, &c.

The National Association for the Promotion of Social Science.—The fifth annual meeting of this Association will be held in Dublin, from the 14th to the 21st of August, under the presidency of Lord Brougham. The fourth department, that of Public Health, will be presided over by Lord Talbot de Malahide; and Dr. E. Lankester is the secretary. Of the fifth department, that of Social Economy, the Hon. Judge Longfield will be president, and Messrs. A. Edgar and H. Fawcett, and Professor John Wilson, will be the secretaries. The third department, that of Punishment and Reformation, will be presided over by the Attorney-General for Ireland. Mr. George Melly and Mr. Martin Ware are the secretaries. Of the second department, that of Education, Sir J. G. Shaw Lefevre, K.C.B., will be president, and the Revs. G. D. Boyle and N. Stephenson the secretaries. The sixth department, that of Trade and International Law, will have Mr. Michael Chevalier as president, and Mr. T. Baines and Mr. J. Westlake as secretaries. The first department, that of Law Amendment and Jurisprudence, will be presided over by the Right Hon. Joseph Napier, and the secretaries will be Mr. J. Napier Higgins and Mr. Arthur Ryland.

Sanitary State of Westminster.—The fifth annual report of Dr. Lankester, the medical officer of health to the vestry of St. James's, Westminster, has been printed by order of the vestry. The report states that one of the questions of practical interest which have been discussed in the sanitary committee during the past year has arisen out of the trapping of gullies and the complaints of stench from the ventilating shafts in the sewers, showing that the sewers and drains are not properly constructed, and allow of deposits, notwithstanding the ample water supply. A second evil is the access of the noxious gases to the interiors of houses where fires are kept, diminishing the pressure of the atmosphere, and occasioning a continued pouring in of poisonous gases from the sewers. Several fatal cases of fever, erysipelas, and sore throat, occurring in the largest houses in the parish, the medical officer could trace to no other cause. For the last two or three years the worst cases of neglected drainage have been in the best houses,—that is, among the wealthier classes, who are astonishingly regardless in this respect. Dr. Lankester has very properly, so far as regards poor dwellings, directed the landlords to provide the means of letting down the upper sashes of windows, holding an unventilated room to be a nuisance, injurious to health; but there are scores of houses of the better classes in which no window opens from the top, and where no current of fresh air has ever pervaded the apartments since they were closed in! Here health is silently and slowly, but surely and fatally undermined, while those who suffer scoff at the idea of so intangible and unappreciable a cause for the mischief that is doing and done.

Local Bands: Testimonial to Mr. F. Leslie.—On the occasion of Mr. F. Leslie's appointment as engineer to the Stockport corporation, and his consequently leaving the Avon-street Gasworks at Bristol, a handsome silver goblet, and a photograph of the local band of twenty-seven of the workmen employed at the gasworks, originated and brought to maturity by Mr. Leslie (who is the brother of the well-known musical composer), were presented to him by the *employés* of the Avon-street Gasworks, as a memento of their respect and esteem for him.

Six Days' Burial alive in a Coal-Pit.—Three men, supposed to have been drowned in Kelvinside pit, near Glasgow, have survived, after enduring severe suffering. They saw the water gradually rising upon them, and took to prayer. One man had some bread with him, which they divided. They slept close together, the inside man taking an outside place when he became warm. All at once they noticed that the water was subsiding; and were then convinced that efforts were being made for their recovery. They placed a stone on the edge of the water, and thereby judged at what rate the water was receding.

Discovery of a Wall Painting in St. Gregory's Church, Norwich.—The repairs of St. Gregory's Church have brought to light what is called a fresco, representing the renowned fight between St. George and the Dragon—a subject which has a local association, St. George being the tutelar saint of the city, and patron of a once flourishing civic company. The painting, which in all probability is of the date of the middle of the fifteenth century, was discovered on the removal of the organ at the west end of the north aisle, for the purpose of cleaning the wall. The figures are life size, and the colours and drawing are good.

Oxford Corn Exchange.—The directors met at the Town Hall on Saturday last, when the two designs by Mr. S. L. Seckham, the city surveyor and architect, selected by the Committee of Estates, were submitted. The directors passed a resolution, which was agreed to unanimously, expressing their approval of both the designs, but gave the preference to the design marked No. 1, on the ground that it was, on the assurance of the architect, superior to either in three very important respects,—light, sound, and ventilation. We understand that estimates for both designs will be received; but that, should the cost of No. 1 exceed what the City are prepared to lay out (2,200*l.*), the design marked No. 3, which is of a plainer character, will be carried out.

Public Offices Site Bill.—On the motion for the third reading of this bill, Mr. A. Smith entered his protest against the second clause, by which power is given to the Crown to obtain compensation from the public for land revenues in respect of the transfer of any premises which might be required for public offices. It was, he remarked, a very serious question, when they considered the enormous sums of money annually spent upon the parks, that it was possible for the public to be called upon to compensate the Crown for revenues thus lost; and the House might rest assured that the course pursued in this bill would be made a precedent. The bill was then read a third time and passed.

Kew Gardens.—The flowers in the variegated beds on each side of the grand promenade, and those in the great parterre on the terrace, in front of the palm-house, are progressing towards their summer beauty and perfection. The Conservatory No. 10 is an especial object of attraction; the verdant embowered roof and walls being festooned, garlanded, and wreathed with foliage in endless variety of form and innumerable rich clusters of fragrant blossom. The pitcher-plant, trumpet-, butterfly-, and passion-flowers, and other botanical rarities, excite the admiration of the curious in such matters: models of the lotus, the Victoria Regia, and other tropical wonders have been placed in the old museum.

The Omnibus.—Sir: In your article, "De Omnibus," in the last number, you mention the 'buses at present in use in Manchester, and that others are about being built for London, on the same principle. We have had them in Liverpool for many years past: in fact, this was the first English town they were introduced in, by Galloway, of Glasgow, and very superior to London 'buses they are; and I should think that, when the Londoners have once tried them, they will not patronise those at present in use. Regarding street railways, I may mention that the railway along the line of docks here has been in use for the last two years or more, and another line from Kensington to Old Swan (about two miles), opens to-day (July 27th), and 'buses run every quarter of an hour.—A Reader.

The Drinking-fountain Movement. — A coast-guard barometer and drinking-fountain has been erected at Southport, on the Promenade, at the cost of Mr. John Fernley. The erection is in the form of a pillar, which has been executed by Mr. Williams, of Manchester, carver, from designs by Mr. Blackwell, of Southport, architect. The style of the pillar is Venetian, executed in Yorkshire stone, with Aberdeen granite columns, white marble vases and carved caps at the four angles, standing on a dado or plinth, and supporting a plain frieze with a recessed arch and circular pediment on the two corresponding faces.——At Pendleton, a drinking-fountain, the gift of Mr. John Purcell Fitzgerald, of Kersall Hall, has been opened for public use. The water issues from a stone pillar, placed at one end of the Pendleton churchyard. The pillar consists of two granite receptacles for surplus water. To this fountain is attached a large slate cistern, from which, when the main supply is stopped, drinkable water may be temporarily drawn.

TENDERS

For completing seven carcasses at Palmer's Green-road, Colney Hatch, for Messrs. Carritt & Son. Mr. John M. Bryson, architect:—

Ellis	£640 0 0
Warren	475 0 0
Dowse	432 10 0
Carroll	410 0 0
Bareham	395 10 0

For erecting a coal-store for the Reading Gaslight Company. Messrs. Cooper & Goulding, architects, Reading:—

Warwick	£304 0 0
Watson	278 0 0
Sheppard	269 0 0
Woodroffe	265 0 0
Innes	250 0 0
Barnicoate (accepted)	240 0 0

For erecting a villa at Landscape Hill, Reading, for Mr. R. Scott. Messrs. Cooper & Goulding, architects, Reading:—

Woodroffe	£1,845 0 0
Simmonds	1,797 16 0
Watson (accepted)	1,550 0 0

For the erection of six cottages at Waltham Abbey, Essex, for Mr. Geo. Coxshall. Mr. W. Brown, architect. Quantities supplied:—

Chaytor	£990 0 0
Elliott	977 0 0
Sawyer	950 0 0
Watson	900 0 0
Cushing	873 10 0
Pitcher	858 15 0
Bently	850 0 0
Cook	810 13 0
Pegler	800 0 0
Wiggs	793 11 6

For intended public-house on the Turner Estate at West Ham, for Mr. Abbott. Mr. John M. Dean, architect. Quantities supplied by Messrs. Hovenden & Heath:—

Reed	£1,349 0 0
Perry	1,320 0 0
Pilkington	1,311 0 0
Rivett	1,223 0 0
Cordery	1,205 0 0
Hedges (accepted)	1,198 0 0

For building two semi-detached villas at Bexley Heath. Messrs. Gosling & Son, architects:—

J. C. & N. Todd	£1,569 0 0
Brown	1,461 0 0
Rudd	1,456 0 0
Elliott	1,440 0 0
Markhall	1,398 0 0
Ginger	1,390 0 0
T. & J. Waller	1,280 0 0
Kent	1,197 0 0
Vaughan	1,189 0 0
Greenwood	1,095 0 0
Moore	1,000 0 0
Lonegan	975 0 0
Flanders	950 0 0
Leadbeater	885 0 0

[We give this as sent to us, but do not profess to understand such doings.]

For Carshalton Gas Works, Surrey:—

Easton	£729 0 0
Potter	660 0 0
Dover	650 0 0
Buck	628 0 0
Sharpington & Cole	556 0 0
Drewett (accepted)	525 0 0
Hills & Co.	475 0 0

For rebuilding the Vinegar Factory, Cumberland Market. Mr. Henry Baker, architect:—

Cubitt & Co.	£1,703 0 0
I'Anson	1,594 0 0
Batterbury (accepted)	1,488 0 0

For rebuilding the old King's Head public-house, in the Euston-road, for the Metropolitan Railway Company. Mr. Henry Baker, architect:—

Lawrence (accepted)	£2,121 0 0

For Jones & Bonham's new auction-rooms, at No. 410, Oxford-street. Mr. Henry Baker, architect:—

Clemence	£2,419 0 0
Mansfield & Son	2,300 0 0
Patrick & Son	2,144 0 0
Patnam & Fotheringham	2,094 0 0
Mathews	2,064 0 0
I'Anson	1,984 0 0
Walker	1,983 0 0
Batterbury (accepted)	1,908 0 0

For works at No. 5, Devonshire-place, Marylebone, for Mr. A. F. Paxton. Mr. Henry Baker, architect:—

Trollope & Sons	£718 0 0
Haward	695 0 0
Parkinson & Son	680 0 0
Warne & Son (accepted)	532 10

For new church at Clapham. Mr. B. Ferrey, architect:—

Hancock	£5,155 0 0
Loat	5,000 0 0
Holland & Hannan	4,822 0 0
Nicholson & Son	4,700 0 0
Todd	4,467 0 0
Ryder	4,400 0 0
Trollope & Son	4,300 0 0
Myers & Son	4,141 0 0
Dove, Brothers	4,075 0 0
Chinnock, Southampton	3,960 12 0

For Seaford Church, Sussex. Mr. J. Billing, architect:—

Favian	£2,665 0 0
Davey	2,660 0 0
White	2,475 0 0
Dove, Brothers	2,445 0 0
Ellis	2,423 0 0
Cane	2,346 0 0

For the erection of a villa at Addington-road, Bow. Mr. James Tolley, architect:—

Pritchard & Son (accepted)	£765 0 0

For additions to mansion, Saxlingham, Norfolk, for the Rev. J. L. Johnson. Mr. John D. Ellis, architect, Norwich:—

Lacey (accepted)	£624 0 0

For warehouses, factories, &c., at Bunhill-row, for Messrs. Cooper & Holt. Mr. Barker, architect:—

Grose & Co.	£3,355 0 0
Piper & Wheeler	3,294 0 0
Conder	3,220 0 0
F. & F. J. Wood	2,993 0 0
Batterbury	2,931 0 0

For the erection of a farm-house at Boro Fen, Lincolnshire, for Mr. W. Maxwell. Mr. Sextus Dyball, architect:—

Swan & Carrington	£1,148 0 0
A. & W. Blood	1,094 14 0
Booth & Son	1,075 0 0
Machin (accepted)	972 0 0

For building a sale-room at 52, Brick-lane, Spitalfields, for Mr. Savage:—

Tolley	£247 0 0
Bartlett	220 0 0
Norman	188 0 0
Single	180 0 0
Langmead	175 0 0

For building manufactory, Newington Causeway, for Mr. D. Haywood. Mr. Henry Jarvis, architect:—

Higgs	£5,345 0 0
Lawrence	4,970 0 0
Myers	4,939 0 0
Gammon	4,679 0 0
Hack	4,669 0 0
Wilson	4,598 0 0
Downs (accepted)	4,548 0 0

For painting the Shire Hall, Norwich. Mr. R. M. Phipson, county surveyor:—

Love	£194 6 0
Cousins	187 0 0
Starling	180 0 0
Cook	160 0 0
Storey	140 0 0
Wright & Son (accepted)	139 19 0
Hardy	117 0 0

For national school and residence, North Fawley, Berks. Messrs. John Money & Son, architects, Newbury:—

Kent	£670 0 0
Wilkins	630 0 0
Messenger (accepted)	570 0 0

For alterations, &c., at Dulwich College Chapel:—

Colls & Co.	£187 0 0
Patrick	152 0 0
Strackey	149 18 0
Piper & Wheeler	136 0 0
Dearas	117 0 0
Sawyer (accepted)	102 0 0

For a villa, at Leamington, Warwickshire, for Mr. W. A. Adams. Mr. Boulnois, architect. Quantities furnished:—

Bromwich	£5,781 0 0
Marriott	5,600 0 0
Briggs	5,500 0 0
Trollope & Sons	5,483 0 0
Hardwick & Son	5,198 0 0
Clark & Son	5,100 0 0
Ballard	5,095 0 0
Barnsley & Sons	4,980 0 0
Gascoyne (accepted)	4,784 0 0

For boundary-wall, iron fence, gates, &c., at St. Paul's, Haggerstone. Mr, Cæsar A. Long, architect:—

	Ironwork.	Brickwork, &c.
Harman	£179 0 0	£46 12 6
Wells	169 10 0	49 8 0
Scott	145 10 0	32 15 0*
Gerish	101 0 0*	

For converting private houses into shops, Islington. Contract No. 1. Mr. Cæsar A. Long, architect:—

Evans	£552 0 0
Larke	268 0 0
Scott (accepted)	251 0 0

For farm-buildings at Breadsall Priory, for Mr. Francis Morley. Mr. R. Scrivener, architect, Hanley:—

Kerry	£1,480 0 0
Sheppard (accepted)	1,350 0 0

* Accepted.